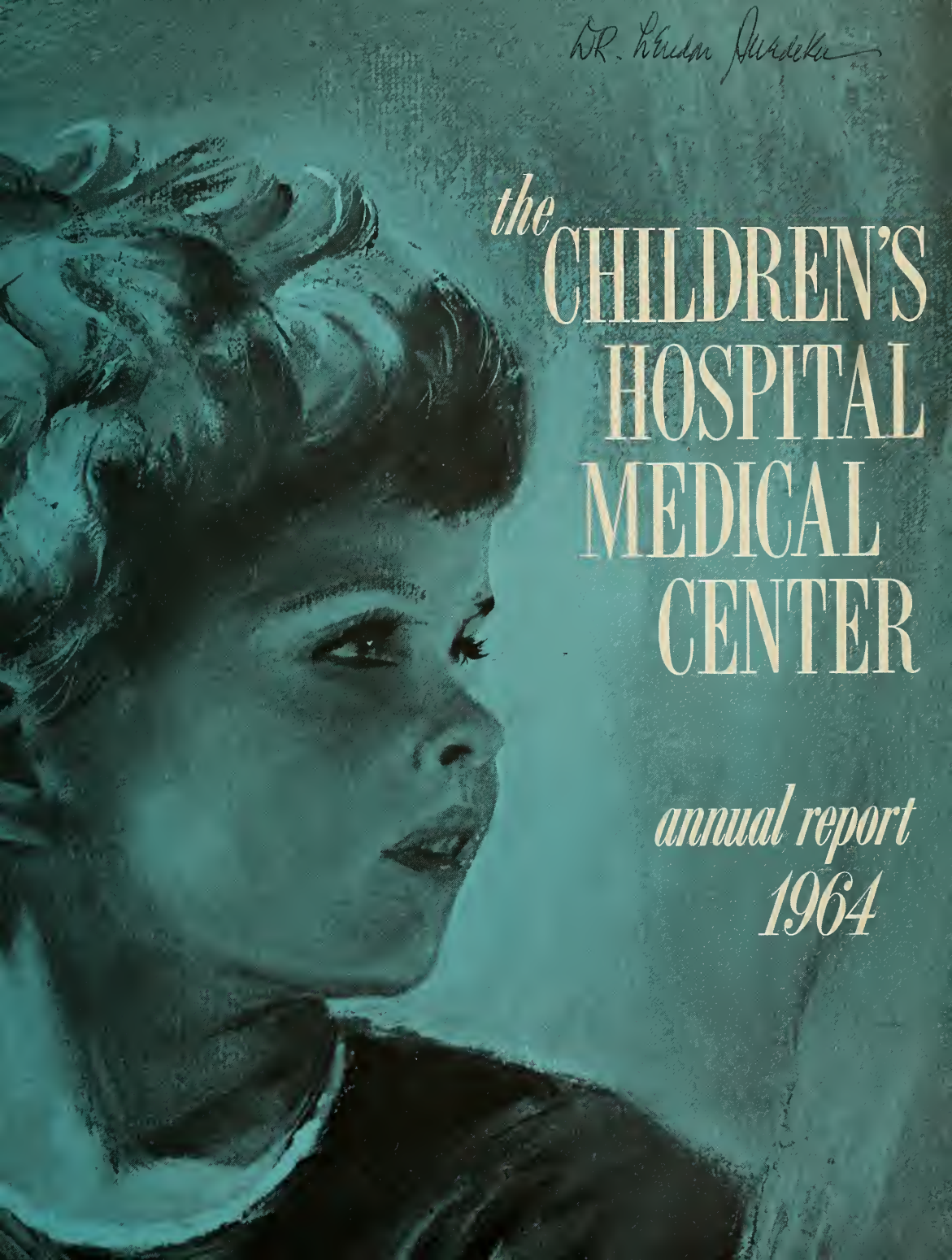

the CHILDREN'S HOSPITAL MEDICAL CENTER

annual report
1964

THE CHILDREN'S HOSPITAL MEDICAL CENTER

Comprising

The Children's Hospital Medical Center

Association of the House of the Good Samaritan

Sarah Fuller Foundation for Little Deaf Children

The Sharon Sanatorium

The Hospital and Convalescent Home for Children

Children's Cancer Research Foundation, Inc.

Judge Baker Guidance Center

The Children's Mission to Children

300 Longwood Avenue, Boston, Massachusetts 02115
Telephone: 617-734-6000

Executive Offices: 45 Milk Street, Boston, Massachusetts 02109
Telephone: 617-482-6120

What is childhood? It is many worlds: one of learning by seeing, doing, thinking. It is a world of expression; of uninhibited joy, of vast pleasures from both meaningful and insignificant moments and things. A child's world is one of trust and love, which some call innocence. It is anticipation, awkwardness, solitude, dozens of feelings and emotions which add up to a miracle. But a child's world can also be one of fear, pain, loneliness and despair. These are the children we see. These are the children we strive to return to the other worlds of childhood.

Cover Portrait Detail by Richard V. Ellery, Danvers, Mass.

THE CHILDREN'S HOSPITAL MEDICAL CENTER

as of April 1, 1965

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THE PRESIDENT'S REPORT

For nearly a hundred years The Children's Hospital, and for varying periods of time the other institutions which, with the Hospital, constitute The Children's Hospital Medical Center, have served the community with devotion and expertness in the provision of medical care of a quality which is recorded in the history of pediatrics. During these years the Staff has pioneered in the introduction of new methods of treatment and diagnosis. As the largest pediatric teaching facility for the Harvard Medical School, and as a research center, it has carried out its mission in helping train doctors and leaders not only for this part of the country but also for the world.

The important plans made by our Staff for the continued expansion of facilities for patient care, teaching and research now are being translated from hopes and dreams into the welcome reality of new construction and blue prints for greater facilities still to come. Our position as a world leader in pediatrics, and as a pace setter for new contributions to the welfare of the young, is firmly established. Nevertheless, all of us must recognize that leadership is a fragile asset and one that is subject to rapid depreciation. Therefore, all of us must strive unceasingly to make sure that our position is never relinquished. Certainly its maintenance will be greatly assisted in the realization of the plans approved by the Trustees and now achieving fruition through the splendid administrative efforts of Dr. Cronkhite and his assistants.

In all of the developments taking place, the relationship of the Hospital to the community has not been forgotten. Although more than half of our patients come from outside Boston proper, and at least ten percent from outside the boundaries of the Commonwealth, from many parts of the country and the outside world, the number of children brought to us from neighborhoods immediately adjacent to the Hospital has been climbing significantly. Our Hospital stands, therefore, as a regional medical center serving all of New England and places far beyond, and at the same time as a neighborhood medical station furnishing primary care for those patients who no longer have easily available to them family doctors or pediatricians. These are responsibilities the Hospital has taken on in addition to its role as a diagnostic and treatment center for rare diseases and for those conditions difficult to treat except with the application of the results of research actually carried on in institutions of our kind.

As Dr. Cronkhite has pointed out in his report, there are important social and economic changes taking place in the community. People today expect, and are entitled to receive, care for their children in comfortable, pleasant surroundings, especially created for this purpose. Great attention has been paid in the planning of our new out-patient facilities not only to meet the needs of the communities we serve, but actually to pioneer in new techniques in the rendering of medical care in an out-patient and hospital environment. In this program Children's Hospital is continuing its great tradition of giving to every infant and child the highest level of care. The completion of our planned new facilities will make it possible for us to provide the finest in care in the best possible surroundings. The Trustees are committed to the maintenance of our world leadership in pediatrics and to constant pioneering in the achievement of ever better care for our patients.

William W. Wolbach
President

DIRECTOR'S REPORT

In the past Annual Reports, the successes and failures of the Hospital have been measured by a variety of yardsticks; excellence of patient care, scientific advancement, quality of teaching, financial stability, and others. Each of these continues to provide a valid measurement in which we may take justifiable pride; but even all together they fall short of telling the whole story. This year it seems appropriate to apply yet another rule of measure to our continuing evolution and growth. We might call it social conscience, or our awareness and responsiveness to the "outside." The advances we shall measure with this new yardstick are significant not only by themselves, but are of perhaps greater importance when viewed in the context of what they now permit us to attempt.

Many of us in the Hospital have been aware that the manner in which we presently do things is not necessarily the best way, when related to the community's needs and wants. As we move closer to a second century of service, we have recognized that changes must be made within the medical center if it is to serve the community both as it demands to be served and as it deserves to be served.

The first such change, instituting a new patient charge policy which insures the permanent interment of hospital care rendered on the basis of economic classification, has been made, and has been operational for a full fiscal year. We now are operating on the thesis that we must give the same level of care to all patients, at the same cost, and in the same facility. The traditional division of patients into "staff" and "private" categories has been relegated to its proper place — that of a reportable statistic.

For almost 18 months, we have had only a single rate for day care, laboratory services, x-rays, and the like. The parents of every child, regardless of their economic status, receive identical bills for identical services. When, as is too often the case, full payment constitutes a real economic hardship, the charge must be abated. However, inability to pay is a problem of administrative concern only and is approached apart from and after medical needs have been met.

The Hospital is well on the way toward accomplishing another change with the same basic goal — the elimination of a system in which the way care is provided depends upon the economic level of those served.

As long ago as the middle of the last century, out-patient departments were firmly established as necessary appendages to large American hospitals. Their role was to provide the medically indigent with services similar to those given the more affluent members of the community by the family doctor in his private office. It was thought inevitable that these departments be overcrowded, poorly organized, and minimally appointed. They often gave the appearance of decay and poverty. There were long waiting lines, but when the patient finally endured the hours of waiting and was called to receive his care, the atmosphere changed to one of near-frantic haste.

Other members of society, when hospitalized or when visiting their doctor during this era, were provided with more comfortable quarters, privacy, a less-hurried atmosphere, and some comfortable furniture. Somehow, in the public mind and in the minds of hospital authorities, these differences in setting became confused with differences in the quality of care rendered. This myth still persists.

To dispel this attitude the Trustees have approved final plans for a new out-patient building specifically designed around a few simple, but untraditional, operational concepts. We have designed a building for all out-patients which will guarantee a degree of privacy and dignity, to parent and child alike. The wooden bench, so long an out-patient symbol, hopefully will disappear from within our walls.

To the new out-patient building, which is to rise 11 stories, will come more than half a million children and parents each year. For each child, visiting us as an out-patient, there are at least two other members of the family present. To meet their needs over and above medical attention, there will be play areas, cafeterias, nurseries, sitting areas, and coat rooms. Provisions for warming bottles, taking naps, changing diapers and the like have been made. While these can hardly be dignified by the term "innovations," they do reflect conscious thoughtfulness in planning.

Still another attempt to depart from traditional patterns of ambulatory care can be recognized in the design of the top floor of the building. Here is to be a day care center where patients with complex disease problems will be delivered by their parents in the morning and picked up in the evening, spending much of the day under the care of hospital personnel while undergoing diagnostic tests, consultations, and observation. This center will eliminate the need for the parent to be away from work or the family for extended periods of time, will cost less than hospitalization or multiple out-patient visits, and will eliminate unnecessary, prolonged separation of parent and child.

It is well to point out that outside the hospital today, the social mores of the community have dictated a degree of basic equality in the day-to-day operations of almost all other quasi-public institutions. Schools, libraries, churches, theaters and the like carry on their activities in a manner unrelated to the economic level of the user. The pressure is on hospitals to do likewise. As a matter of fact, there is serious doubt that any advantage at all, including an economic one, comes to hospitals which cling to outmoded facilities and archaic administrative systems for the out-patients.

Happily, none of our accomplished changes conflicts in any way with the hospital's own continuing pursuit of scientific excellence, its quality of care, or its method of teaching. But, can one predict the effects of these modest beginnings in the arena of social and economic awareness? I think so, and in the long run I believe that both hospital and patient will benefit. I would hope that the private, voluntary, university hospital would be viewed by the population it serves as a more integral and important part of day-to-day community life.

There will be an immediate effect on the already precarious financial condition at the Hospital. As more patients come to the Hospital, the percentage of medically indigent will remain proportionate, thus increasing our total loss in the areas of free care and allowances. This is almost an inevitable parallel to any enlightened approach in providing care to large numbers of unselected patients. Nonetheless, I believe it entirely appropriate that the hospital take the first step and then rely on the community through its elected representatives to respond.

We have been forced in recent years to adhere to fiscal policies for which even the most uninformed economist must predict ultimate disaster. From its beginning, the Hospital took upon itself the responsibility of giving medical care to the community without regard for ability to pay or any other non-medical consideration. In 1964, we provided free care and allowances of over $850,000, and it is significant that this figure exceeded our published deficit for the period. As a result, we found ourselves forced into constant rate increases which must be borne almost entirely by the parents of patients who can afford to pay their hospital bills. For these unfortunate persons the burden has become staggering, to the point where illness can be catastrophic for the average wage earner. Regardless of how admirably Robin Hood stands in literature, there is obviously a bottom to the pile of bullion in the King's coffers. Furthermore, this is a role we cannot continue to play in good conscience. The problem of medical indigency is of concern to the entire community, and cannot be shouldered by just those members whose misfortune it is to be sick. Thus we, as an institution, must take the initiative in providing care not only of great quality but in the manner most desired by those served. We receive some assurance that our direction is not a disastrous one in that there is little historical precedent for the community to turn its back on the institutions it values.

Leonard W. Cronkhite, Jr., M.D.
General Director

TREASURER'S REPORT

Higher occupancy and increased use of Hospital services, which resulted in greater patient revenue than in the previous year, was an encouraging feature of 1964. Total occupancy for the year was 81.8 percent compared to 76.2 percent in 1963, an increase of 7.7 percent in patient days.

During the year, a non-contributory retirement plan for all qualified employees with over two years of service, and who had attained 30 years of age, was established. After provision for this plan, including prior service amortization over 25 years, the loss for the fiscal year, as the accompanying statements show, was $763,000 before depreciation. However, we should like to point out that the loss *before* provision for the employees retirement plan was $594,000 compared to $699,000 in 1963, a 15 percent decrease in the loss.

As may be seen, the major part of the deficit consists of free care to the medically indigent and welfare adjustments (the difference between the Hospital per diem cost of $59.00 and the $41.25 per diem rate of reimbursement received from State agencies, which is controlled by statute). The continuing rise in these costs, which are not being borne by the community as a whole, and the increase in the cost of operating the Hospital, constitute a problem which remains unsolved not only by this Hospital but by similar private charitable institutions.

F. Murray Forbes, Jr.

F. Murray Forbes, Jr., *Treasurer*

THE CHILDREN'S HOSPITAL MEDICAL CENTER STATEMENT OF INCOME

For the Years Ended September 30, 1964 and 1963

	1964		1963	
During the period we billed patients for:				
Inpatient care	$ 3,270,694		$ 2,971,445	
Ancillary services	3,329,207		2,698,489	
Outpatient clinic fees	524,931		468,872	
Total patient revenue		$ 7,124,832		$ 6,138,806
We spent or incurred for:				
Patient care—salaries	$ 5,693,689		$ 4,993,233	
Patient care—expenses (including $169,426 for retirement plan in 1964—Note 1)	3,543,376	$ 9,237,065	2,880,898	$ 7,874,131
Research and education—salaries and expenses	$ 2,686,271		$ 2,422,831	
Supported by grant income of	(2,686,271)	—	(2,422,831)	—
Less revenue received for:				
General services, dietary, School of Nursing, etc.	$ 754,596		$ 469,692	
Overhead from grants	282,496	1,037,092	219,152	688,844
Net operating expenses		$ 8,199,973		$ 7,185,287
Resulting operating loss before free care and rate adjustments was		$(1,075,141)		$(1,046,481)
Because of contractual arrangements and patients' inability to pay, we issued:				
Rate adjustments to Blue Cross, net of prior year credits of $167,146 in 1964	$ 37,889		$ 139,910	
Rate adjustments to welfare agencies	308,234		220,618	
Allowances to patients	541,496		532,839	
Account write-offs, net	156,934	1,044,553	91,467	984,834
Since patient revenue did not equal expense and free care cost, the operating loss was		$(2,119,694)		$(2,031,315)
This loss was partially defrayed by income from:				
Investments and trust funds	$ 892,774		$ 869,666	
Allotments from affiliates	239,700		198,481	
United Community Services	96,596		80,597	
Contributions for patient care	127,541		162,720	
Contributions—Committee of the Permanent Charity Fund	—		20,000	
Total other income		1,356,611		1,331,464
Loss before depreciation		$(763,083)		$(699,851)
Depreciation:				
Building	$ 316,853		$ 295,086	
Equipment	153,942	470,795	142,763	437,849
Net loss for the year charged to General Fund		$(1,233,878)		$(1,137,700)

The accompanying notes are an integral part of this statement.

THE CHILDREN'S HOSPITAL MEDICAL CENTER BALANCE SHEET

September 30, 1964 and 1963

ASSETS	*1964*	*1963*
CURRENT ASSETS:		
Cash	$ 1,507,582	$ 663,292
Accounts receivable —		
Patients, less allowances of $259,357 for doubtful accounts	1,765,338	1,663,850
Affiliated organizations	139,434	164,443
Other	174,854	154,718
	$ 2,079,626	$ 1,983,011
Inventories, at cost *(first-in, first-out)*	127,982	122,333
Prepaid expenses and deferred charges	111,238	35,305
Total current assets	$ 3,826,428	$ 2,803,941
CASH SURRENDER VALUE OF LIFE INSURANCE AND ANNUITY POLICIES	241,861	208,551
INVESTMENTS *(Note 2)*	19,484,189	19,686,917
HOSPITAL PROPERTY AND EQUIPMENT, net *(Notes 3 and 5)*	10,337,320	9,223,496
CONSTRUCTION IN PROGRESS *(Note 4)*	1,155,465	353,948
	$35,045,263	$32,276,853

LIABILITIES AND CAPITAL FUNDS		
CURRENT LIABILITIES:		
Accounts payable	$ 327,932	$ 220,171
Accrued payrolls and other expenses	66,810	136,894
Total current liabilities	$ 394,742	$ 357,065
MORTGAGE NOTES PAYABLE *(Note 4)*	1,552,499	670,554
RESERVE FOR INSURANCE AND ANNUITIES *(Note 1)*	240,754	207,538
RESERVE FOR RETIREMENT PLAN *(Note 1)*	169,426	—
FUNDS HELD FOR OTHERS	268,170	229,846
FUND BALANCES:		
General	4,930,116	6,288,197
Special purpose	1,417,570	1,540,050
Endowment	11,152,696	10,200,623
Permanent plant	10,337,320	9,223,496
New building construction *(Note 5)*	4,227,345	3,559,484
Construction in progress	354,625	—
	$32,419,672	$30,811,850
	$35,045,263	$32,276,853

The accompanying notes are an integral part of this balance sheet.

Report of Independent Certified Public Accountants

ARTHUR ANDERSEN & CO.
294 WASHINGTON STREET
BOSTON, MASSACHUSETTS 02108

To the Board of Trustees,
The Children's Hospital Medical Center:

We have examined the balance sheet of THE CHILDREN'S HOSPITAL MEDICAL CENTER (a charitable corporation organized in Massachusetts) as of September 30, 1964, and the related statements of income and fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We had made a similar examination for the preceding year.

In our opinion, the accompanying balance sheet and statements of income and fund balances present fairly the financial position of The Children's Hospital Medical Center as of September 30, 1964, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Boston, Massachusetts, December 2, 1964. Arthur Andersen & Co.

THE CHILDREN'S HOSPITAL MEDICAL CENTER STATEMENT OF FUND BALANCES

For the Year Ended September 30, 1964

BALANCE SEPTEMBER 30, 1963	$30,811,850
Net loss for the year, from statement of income	(1,233,878)
Gains on sales of securities	601,893
Net contributions, gifts, bequests and restricted endowment fund income	1,755,415
Funds provided by others for equipment purchases and building renovations	463,149
Outside grants for special purposes	2,768,020
Expenditures for research and education	(2,686,271)
Miscellaneous	(60,506)
BALANCE SEPTEMBER 30, 1964	$32,419,672

The accompanying notes are an integral part of this statement.

NOTES TO FINANCIAL STATEMENTS

September 30, 1964

(1) Effective October 1, 1963, the Medical Center instituted a noncontributory retirement plan for all qualified employees. Employees with two or more years of service who have attained 30 years of age are qualified. The estimated annual cost of the plan, on the basis of present employment and salary levels, is approximately $170,000, including $73,000 for the amortization of past service costs which are being funded over a 25 year period. The estimated unfunded past service costs at September 30, 1964, were approximately $1,030,000.

(2) Investments are stated at cost or, if received by gift or bequest, at fair market value when acquired.

A consolidated investment pool is maintained. Investment balances by fund represent each fund's share of the consolidated investment pool at September 30, 1964, which is summarized as follows:

	Book Value	*Quoted Market Value*	*1964 Income*
Bonds	$ 8,955,468	$ 8,931,144	$395,847
Preferred stocks	282,352	270,265	12,683
Common stocks	10,182,768	20,013,439	535,941
	$19,420,588	$29,214,848	$944,471
Special investments held for others	63,601	80,496	2,793
	$19,484,189	$29,295,344	$947,264

(3) Hospital property and equipment is stated at cost. A summary of the changes in property and equipment accounts for the year ended September 30, 1964, and balances of allowances for depreciation are set forth below:

Year Ended September 30, 1964

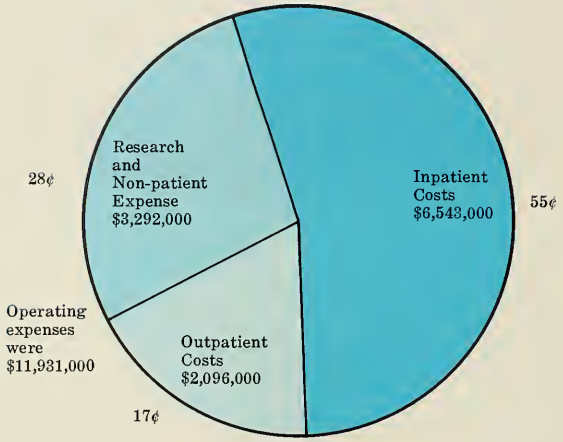
	Beginning Balance	*Net Additions*	*Ending Balance*
Property and equipment:			
Land	$ 504,414	$ 49,776	$ 554,190
Buildings	11,934,081	1,245,195	13,179,276
Equipment	2,267,046	289,648	2,556,694
	$14,705,541	$1,584,619	$16,290,160
Allowances for depreciation	5,482,045	470,795	5,952,840
	$ 9,223,496	$1,113,824	$10,337,320

(4) During the year ended September 30, 1964, the Medical Center completed construction of a parking facility at a cost of approximately $1,200,000. In connection with this construction, the Medical Center borrowed $825,000 under a first mortgage loan, payable within 20 years, with interest at 6% for one year and 5¼% for all subsequent years and borrowed $300,000 under a second mortgage loan with interest at 6½%.

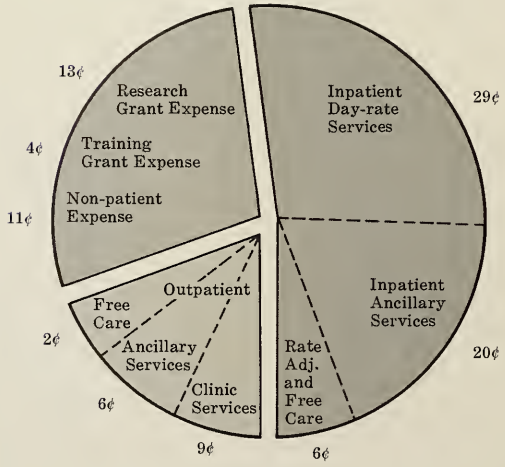
The Medical Center also purchased a building during the year at a cost of $450,000. Funds were provided by borrowing $315,000 under a first mortgage 5½% loan payable over a 20 year period and $135,000 under a 6½% second mortgage loan payable within 5 years.

(5) The net balance of the New Building Construction Fund of $4,227,345 represents funds designated for the construction of a clinic and research building. The Medical Center has entered into commitments of approximately $2,400,000 for the construction of the initial stages of this building, of which $843,462 had been expended at September 30, 1964.

The Hospital Expense Dollar was used for these operating costs:



In order to provide patient care services and medical research activities



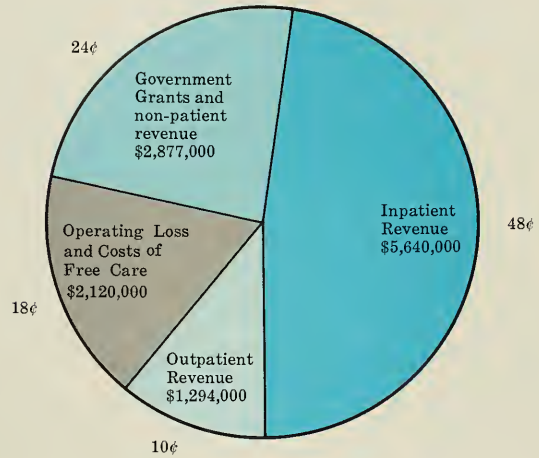
In the fiscal year 1964 it cost The Children's Hospital Medical Center $2,120,000 more to operate the Hospital than it received from patients, insurance companies and Blue Cross, welfare agencies, and research grants. This operating loss was partially defrayed by income from investments and allotments of $1,132,000, United Community Service contribution of $97,000, and other contributions for patient care of $128,000. Since these sources of other income totaled only $1,357,000, it was therefore necessary to allocate $763,000 from the endowment fund principal contributed to the Hospital in prior years.

In addition to the "out-of-pocket" operating expenses above, depreciation of building and equipment of $470,000 was charged to the general fund in 1964. However, since operating revenues have not been sufficient to provide for the annual funding of depreciation, it was necessary to use general fund capital of $566,000 for replacement of plant and equipment during the year 1964.

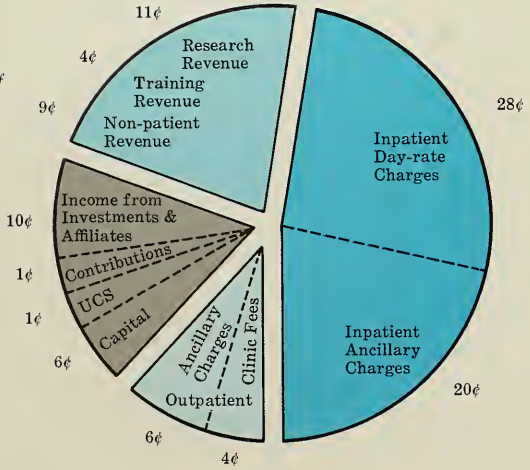
The Hospital Revenue Dollar came from patient day-rate charges, ancillary charges, research grants, and other income and capital to defray the operating loss and cost of free care:

Operating revenues were $9,811,000

Other income, $1,357,000 and capital, $763,000 defrayed the operating loss of $2,120,000



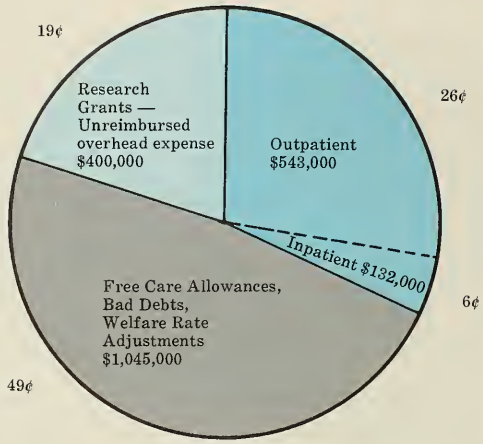
The detailed source of this revenue was:



THE CHILDREN'S HOSPITAL MEDICAL CENTER

FISCAL YEAR 1964
FINANCIAL PICTURE

The Operating Loss Dollar
$2,120,000



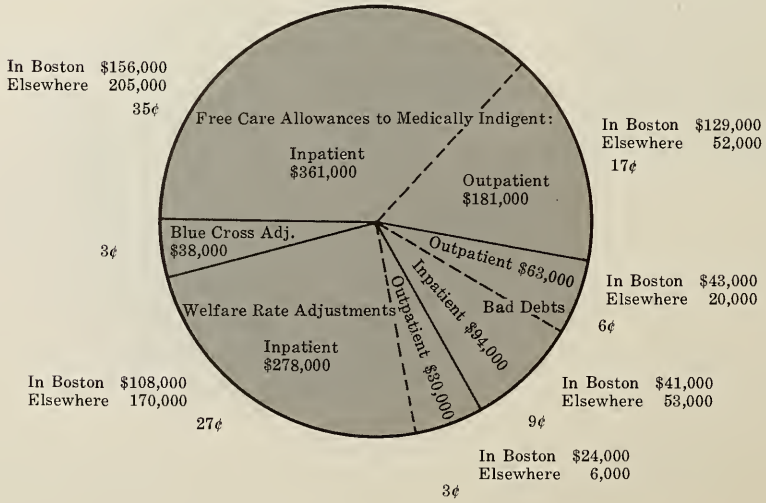
Based on internal cost report analyses, the losses incurred in providing patient care services represent the excess of direct salaries, expenses, and indirect expenses over the revenue received from the charges to patients. The clinics accounted for the greater portion, $543,000. Outpatient costs averaged $8.60 per visit while the average fee was $4.20 per visit. In 1964, more patients were seen in the emergency and special clinics than in any previous year: 129,000 visits by 30,000 patients. The loss in the inpatient divisions was considerably less, $132,000, due to the increase in patient revenue, reflecting the improved occupancy level of 81.8 percent for the year.

The loss of $400,000 in research and non-patient activities was due to overhead expenses of administration, maintenance, housekeeping, etc., which were greater than the overhead reimbursement received from grantors. The ratio of indirect to direct expense was 26 percent; however, overhead research reimbursement from the National Institutes of Health was 20 percent and the training grant reimbursement rate from the Public Health Service was 8 percent.

Free care allowances are given to those unable to pay all or part of their bills. In addition, the Hospital "forgives" other account indebtedness, determined uncollectible. These patients, although medically indigent, are not eligible for any community assistance program; for example, Boston residents who should be eligible for assistance are refused general relief applications since the Boston Welfare Department denies liability, stating they should be sent to Boston City Hospital. This ineligible group accounts for a significant portion of the free care allowances.

Welfare rate adjustments, or rate deficiencies, are incurred because of the inadequate welfare reimbursement rate. In 1964, state and locally administered agency programs reimbursed the Hospital, for children in the programs, at $41.25 per day, while the full cost to the Hospital for providing these services was $59.00. In 1964 it was necessary to use $763,000 from principal to pay for free care.

The Free Care and Welfare Adjustment Dollar
$1,045,000



STATISTICAL SUMMARY

	Admissions		Patient Days		Increase (Decrease)		Percentage of Occupancy	
INPATIENT	*1964*	*1963*	*1964*	*1963*	*Days*	*%*	*1964*	*1963*
Short-term divisions (306 beds)	10,931	10,737	92,912	85,550	7,362	8.6	83.0	76.6
Long term divisions (37 beds)	176	171	9,826	9,886	(60)	(0.6)	72.6	73.2
Total Hospital (343 beds)	11,107	10,908	102,738	95,436	7,302	7.7	81.8	76.2

OUTPATIENT	*1964*	*1963*
Clinic Visits	129,183	118,414
SPECIAL SERVICES		
Operations	6,416	6,044
Laboratory tests	198,837	169,046
Electroencephalograms	2,270	1,627
Electrocardiology examinations	4,213	4,093
X-ray films	111,559	91,346
X-ray therapy treatments	2,908	4,118
Physical therapy treatments	30,816	26,908
Respiratory therapy services	34,785	—

SOURCE OF CHILDREN'S HOSPITAL PATIENTS

by place of residence

(Excluding an estimated 35,000 outpatients making repeat visits.)
For the year ended September 30, 1965

Massachusetts	23,962
Boston	10,191
Elsewhere in Mass.	
Barnstable County	150
Berkshire County	174
Bristol County	727
Dukes County	10
Essex County	1,457
Franklin County	69
Hampden County	304
Hampshire County	116
Middlesex County	5,593
Nantucket County	15
Norfolk County	2,888
Plymouth County	922
Suffolk County	790
Worcester County	556
Other New England States	1,769
Connecticut	401
Maine	347
New Hampshire	472
Rhode Island	423
Vermont	126
Elsewhere in United States	527
Alabama	4
Arizona	5
California	24
Colorado	2
Delaware	3
District of Columbia	1
Florida	40
Georgia	8
Hawaii	1
Idaho	2
Illinois	5
Indiana	6
Iowa	1
Kansas	5
Kentucky	4
Louisiana	1
Maryland	15
Michigan	7
Minnesota	1
Missouri	3
Nebraska	1
Nevada	1
New Jersey	71
New York	227
North Carolina	16
North Dakota	1
Ohio	7
Oregon	2
Pennsylvania	22
Puerto Rico	3
South Carolina	6
South Dakota	1
Tennessee	5
Texas	5
Utah	1
Virginia	13
Washington	4
West Virginia	1
Wisconsin	2
Elsewhere in the World	183
Grand Total	26,441

CHANGES

Mr. John Balsama was appointed Administrative Assistant to the General Director, January 11, 1965.

Miss Josephine Daley, Head Telephone Operator, retired from CHMC after 34 years, February 28, 1965.

Mrs. Helen Bennett became Acting Chief Operator, February 28, 1965.

Doctor Sidney Farber, Pathologist-in-Chief, was appointed Chairman of the Staff, February 20, 1965.

IN MEMORIAM

Dr. Dinah Kohner, former Assistant Resident in Medicine, died September 14, 1964.

Dr. Clarence E. Bryant, former staff member, died November 21, 1964.

Dr. Joseph S. Barr, Consultant, died December 6, 1964.

Samuel H. Wolcott, former Trustee, Treasurer and President of Children's Hospital, died December 18, 1964.

Mrs. Wreatha Meahl, former receptionist, died December 29, 1964.

Dr. Samuel W. Myers, former staff member, died January 6, 1965.

Thorvald S. Ross, former Trustee, member of the Executive Committee, Treasurer of the House of the Good Samaritan and last President of the Charitable Surgical Appliance Shop, died March 20, 1965.

Officers Executive Committee 1963 - 1964

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Mrs. Kenneth W. Warren

Vice-Chairmen
Mrs. T. C. Haffenreffer, Jr.
Mrs. Phillip C. Thibodeau

Recording Secretary
Mrs. Stephen Little

Corresponding Secretary
Mrs. Frederick R. Weed

Treasurer
Mrs. Howard F. Gillette

Executive Committee—
Rotating members for three years:
Mrs. John M. Alden
Mrs. Charles W. Bartlett
Mrs. Alexander S. Nadas
For Two Years:
Mrs. Oldfield B. B. Rapalyea

For One Year:
Mrs. Charles F. Batchelder
Mrs. Hans J. Kroto

For two years, to fill unexpired terms:
Mrs. H. Bourne Pillsbury
Miss Agnes Wheeler

For two years, to fill unexpired term:
Mrs. George Sturgis

Members Ex-officio of the Executive Committee:
Past Chairman
Mrs. David Wilder

Friends of C H M C
Mrs. Charles F. Hovey

Nominating Committee
Mrs. David Wilder

Staff Wives
Mrs. Charles A. Janeway

Volunteer Service
Mrs. Roger A. Perry

THE CHILDREN'S HOSPITAL MEDICAL CENTER WOMEN'S COMMITTEE

Chairman's Report

The highlights of the past year have been numerous. Each day brings new challenges which we must meet as a group and as individuals if we wish to keep pace with the changing pattern of medical care and assist the Hospital administration. The most significant change occurred with the revision of the Women's Committee by-laws to accommodate the new "Friends of the C H M C." Formation of this group was the result of a growing need for a broader membership in the hospital. It is open to all interested men and women.

Knowledge of the various units of the Hospital has been furthered by the assistance of the staff in addressing our monthly meetings. This year an effort was made to provide some continuity in subject matter, to highlight endeavors of the past few years, and to introduce research scientists and clinicians directing such efforts. Our speakers included Dr. Park S. Gerald, who discussed "Chromosomes and Diseases of Children," and Dr. John F. Crigler, Jr. who spoke on "What is Endocrinology?" Dr. Edward A. Mason narrated his film "Children in the Hospital," and Dr. Robert P. Masland, Jr. discussed "The Physician and the Adolescent." Mr. William J. Brennan spoke at the May meeting at my home on "Public Relations of the C H M C and the Women's Committee." Dr. Leonard Cronkhite, Jr. completed our lecture series summarizing "Progress — 1964."

We have provided supplementary financial assistance for hospital projects, with the approval of the Director. In this respect, fiscal 1964 has been overwhelmingly successful. The past twelve months have netted the Women's Committee a total of $43,906.17 — an increase from 1962-1963 of $8,678 — of which $40,906.17 are voteable funds. We are most grateful to the Outside Activities of the Hospital, including the Daffodil Club, the Cohasset Tennis Tournament, and the Cataumet Hospital Week of the South Shore.

During the past year, service to the Hospital was carried out in superb fashion. The tangibles of income earned by the fund-raising committees are recorded in black and white for all to read. The intangibles of volunteer services to the patients and hospital are not measured in terms of dollars and cents, although if one equated their worth with the minimum hourly wage of the hospital, they too would mount to significant heights.

Two new items appear on our contribution list, that of the Nurses Rotating Loan Fund, and a small fund for the pre-anesthesia room. We continued the Northeastern University project with a reduced gift, and also our support of the Department of Recreation and Education. In making allocation of funds, availability of monies from other sources, the need, and an equitable distribution among departments were considered. Government grants do not always fulfill the entire request from an overburdened departmental budget.

Attendance at various functions within and outside the hospital is expected of your Chairman, all of which have been pleasurable and instructive. Among these have been The Women's Committee tea, in honor of The United Order True Sisters, Inc., Noemi No. 11, the annual Christmas Tea in Gardner House, the Employees Christmas Party, the Volunteer Party, the annual C H M C Bowling Dinner, the C H Alumni Club and the Alumnae Assoc. of the C. H. School of Nursing annual dinners, the C H M C picnic, the Teen-Age Volunteer orientation week, and graduation exercises for the nurses.

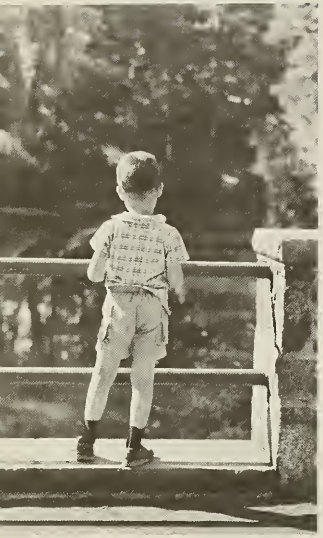
I have attended various hospital meetings at the local, state and regional levels. Among these were the various meetings of the Greater Boston Hospital Association, the 28th M H A annual meeting, and the N. E. Hospital Assembly. I was unable to attend the A H A Annual Meeting in Chicago, August 24-27, and wish to express my appreciation to Mrs. David Wilder for representing the Women's Committee in addition to her other duties as Chairman of the Greater Boston Region on Hospital Auxiliaries of the M H A.

The Women's Committee is a most extraordinarily devoted group of ladies, which holds service to the hospital uppermost, but one which can also direct a successful business. In terms of service it is impossible to estimate the extent of good-will carried to the surrounding communities, or of the understanding, helpfulness, and compassion you give our patients. We are not all business as our report might indicate, and know that the human element will never be removed from services. Our 35 cent luncheon — a choice of any three items to a child just because he is a child — and our gift for cuddly-type toys for the pre-anesthesia room are the dividends of a financially successful year.

Respectfully submitted,

Ann T. Warren

Mrs. Kenneth W. Warren,
Chairman



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Vice-Chairmen
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Mrs. Philip C. Thibodeau
Recording Secretary
Mrs. Stephen Little
Corresponding Secretary
Mrs. Frederick R. Weed
Treasurer
Mrs. Howard F. Gillette
Executive Committee—
Rotating members for three years:
Mrs. Eugene H. Clapp II
Mrs. James G. Wheeler
Mrs. Roswell M. Boutwell III
For Two Years:
Mrs. John M. Alden
Mrs. Charles W. Bartlett
Mrs. Alexander S. Nadas
For One Year:
Mrs. H. Bourne Pillsbury
Mrs. Oldfield B. B. Rapalyea
Miss Agnes Wheeler
Members Ex-officio:
Past Chairman
Mrs. David Wilder
Friends of C H M C
Mrs. Charles F. Hovey
Nominating Committee
Mrs. David Wilder
Staff Wives
Mrs. John F. Crigler, Jr.
Volunteer Service
Mrs. Roger A. Perry

WOMEN'S COMMITTEE CHILDREN'S HOSPITAL MEDICAL CENTER
FINANCIAL SUMMARY 1963 - 1964
MRS. T. C. HAFFENREFFER, JR., *Chairman*

Cash on Deposit, September 30, 1963	$35,228.08	
Transactions (Per Summary of Cash Reports for Fiscal Year Ending September 30, 1964):		
Add: Receipts	47,189.35	
	$82,417.43	
Less: Disbursements	38,511.26	
Cash on Deposit, September 30, 1964		$43,906.17
Less: Cash Balance required for Monthly Expenses		3,000.00
Available Funds to be voted for 1964 - 1965		$40,906.17

DISTRIBUTION OF FUNDS 1964 - 1965

COMMITTED:		
Yankee Bookstall proceeds to Building Fund		$ 5,225.36
Daffodil Fair proceeds to Department of Education and Recreation		3,300.00
Cohasset Tennis Tournament proceeds to Nurses Loan Fund		1,300.00
		$ 9,825.36
COMMITTEE OPERATION EXPENSE ITEMS:		
Teas and Entertainment	$ 1,500.00	
Staff Wives	1,100.00	
Flower Fund	450.00	
Discretionary Fund	300.00	
Library Committee	350.00	
Photography Committee	200.00	
Holiday Committee	50.00	
Knitting Committee	—	
Picture Fund	25.00	
Periodicals *(Doctor's Lounge)*	25.00	
		$ 4,000.00
CONTRIBUTION ITEMS:		
Northeastern University Project	$ 5,000.00	
Department of Education and Recreation	4,000.00	
Department of Otolaryngology *(Microscope)*	3,400.00	
Department of Otolaryngology *(Instruments for Microscope)*	2,500.00	
Department of Anesthesia *(2 Anesthesia Machines)*	3,000.00	
Rotating Loan Fund for Nurses	2,500.00	
Department of Cardiology *(Mobil-Visio Cardiette Machine, plus repairs and equipment)*	1,690.00	
Scholarships for Nurses	1,500.00	
Department of Surgery *(Hyperbaric Chamber Instruments)*	1,125.45	
Medical Emergency Clinic *(1 Binocular Microscope 2nd hand)*	500.00	
IBM Electric Typewriter *(Women's Com. Office)*	500.00	
Department of Social Service	840.36	
Tickets for Nurses	375.00	
Department of Anesthesia *(Toys for Pre-Anesthesia Room)*	100.00	
Bowling Prize — Hospital Employees	50.00	
		$27,080.81
November 10, 1964 TOTAL TO BE VOTED:		$40,906.17

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as of April, 1965

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ASSOCIATE PHYSICIAN-IN-CHIEF
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Medical Out-Patient Department

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Newborn Division

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Miriam D. Manning MD
(Tumor Therapy)
Marshall Melin, PhD
Ezio Merler PhD
Hans B. Nevinny MD
(Tumor Therapy)

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Simeon Locke MD (Neurology)
W. Warren Point MD
Herbert Selenkow MD

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Somers H. Sturgis MD

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FORM OF BEQUEST

I give, devise, and Bequeath to the Children's Hospital Medical Center, in the City of Boston, a charitable corporation organized under the Laws of the Commonwealth of Massachusetts, the sum of .....

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The last two-year period has been an important one in the development of the Anesthesia Department. During this time the department has been established as an independent service, has organized a 24-hour hospital facility for determining blood-gases, and has established a Respiratory Therapy Service, handling all of the oxygen and respiratory therapy throughout the hospital. In addition, of course, daily administration of anesthesia as well as teaching functions have continued.

During the year ending October 31, 1963, a total of 5728 anesthetics were administered, and during the following year, ending October 31, 1966, the total was 6678.

The Blood Gas Laboratory, headed by Dr. John Stetson, has been instrumental in facilitating better metabolic care of critically sick patients either following thoracic surgery, or during severe illness. The Respiratory Therapy Service, organized and directed by Dr. Dean Crocker, has greatly improved the management of all patients with respiratory problems. A centralized location for all oxygen apparatus, and a 24-hour staff of therapists has created a most efficient working unit.

The Anesthesia Service for the past two years has been headed by a partnership group of four full-time physician anesthesiologists, plus a full time associate, two nurse anesthetists, and house staff consisting of six to eight assistant residents and residents, either on four month rotation periods from affiliating hospitals, or in full-time appointments for six months to one year.

Activities

Members of the staff have participated in various organizational activities during this period. Dr. R. M. Smith has been elected a Director of the American Society of Anesthesiologists, Chairman of the Committee on Anesthesia of the American Academy of Pediatrics, and President-elect of the New England Society of Anesthesiologists.

Dr. Stetson has served as Chairman of the Greater Boston Anesthesia Teaching Conferences for the past two years, and Dr. Crocker was one of three anesthesiologists who organized a conference on Respiratory Therapy, held in Boston during the past fall. All members of the staff have lectured to various groups throughout the country, and Drs. Smith and Stetson have been invited on several speaking trips in Europe and South America.

Research activities have centered about the Blood Gas Laboratory which has been developed around an Astrup Gas Analyzer, gained through the efforts of Dr. Harry Mueller, and a gas chromatograph, which was financed through the Wolbach Fund. Interest has also been stimulated by experience in the hyperbaric oxygen chamber. In all of these fields it is expected that work will be continued and expanded. Dr. John Adams and Dr. Carol Johnson have carried heavy responsibilities in clinical work and teaching and have also been performing basic standardization of the gas chromatograph.

Robert M. Smith, M.D.
Anesthesiologist-in-Chief

House Staff

1962	Dr. William Bullwinkle	*Massachusetts*
	Dr. Duard Lawrence	*Florida*
	Dr. Audrey Lewis	*Ontario*
	Dr. Etsuro Motoyama	*Japan*
	Dr. Vernon Weikel	*Iowa*
1963	Dr. Paul Antonelli	*Massachusetts*
	Dr. Edward F. Balius	*Illinois*
	Dr. Marcel Boulanger	*Canada*
	Dr. Harry E. Bowen	*Massachusetts*
	Dr. Peter A. DelGiudice	*Massachusetts*
	Dr. Joan W. Flacke	*Massachusetts*
	Dr. Wilfred Fortin	*Maine*
	Dr. Sheila McNamara	*Ireland*
	Dr. John D. Murphy	*Massachusetts*
	Dr. Joseph Patterson	*North Carolina*
	Dr. David A. E. Shephard	*Massachusetts*
	Dr. Lois Swearingen	*Massachusetts*
1964	Dr. Joan M. Brown	*England*
	Dr. John M. Bruner	*Massachusetts*
	Dr. Huan-Ting Chen	*Formosa*
	Dr. John D. Doykos	*Massachusetts*
	Dr. Ronald W. Dunbar	*Illinois*
	Dr. Nicholas A. Fotias	*California*
	Dr. George Gay	*Missouri*
	Dr. Lewis W. George	*Mississippi*
	Dr. Thomas M. Glushien	*Pennsylvania*
	Dr. Louis Medeiros	*Maryland*
	Dr. Joseph Mulherin	*Georgia*
	Dr. Donald R. Reimer	*Colorado*
	Dr. Philip Seymour	*Massachusetts*
	Dr. Howard B. Spey	*New York*
	Dr. Raymond Widican	*New York*

The patient load remains about the same as that reported in 1962 excepting our assuming the responsibility for children under the age of 10 years in a special clinic known to us as The 380 Special Dental Program. This current year we expect to provide dental care for about 300 children in this special clinic and as time goes on this number will increase appreciably.

The 380 Special Dental Program is a special study being continued by the hospital in cooperation with Local 380 Teamsters' Union of milk wagon drivers. It is our intention in this service to achieve time, cost and methodological studies designed to provide the best dental maintenance and oral health care for children during the developmental years which can be done at the chairside. We have been assured and therefore expect that the cost shared by the hospital in this study will be augmented by a grant from H.E.W. Special services in dental surgery and orthodontics will also be provided this group upon parental request for any given individual at the expense of the family—resulting we hope in some supplementary figures to the chairside studies.

Our teaching load has been increased since we now have agreed to accept intern graduates of this and other children's hospitals on a 13 months' residency. Two appointments will be offered for this service meeting the requirements of the Council of Dental Education of the A.D.A. Didactic exercises and teaching opportunities with undergraduate students will be provided by the Harvard School of Dental Medicine, making this a joint effort of the two institutions. Two new graduate students have been added in the last two years on a program in cooperation with the Department of Pedodontics of the Harvard School of Dental Medicine on three-year fellowships under an N.I.H. Grant. These fellows spend approximately 12 months of their three-year training period in clinical effort at this hospital. The remainder of our teaching program remains the same as reported in 1962.

Staff Changes

I am happy to report an addition to our full-time senior staff by the appointment of Dr. Robert F. Watton who has accepted an assignment as Associate in Pedodontics. Drs. Eugene Petersen, John Doykos and Raymond Widican have accepted half-time appointments as Assistants in Pedodontics. Dr. Edward Sweeney joined our staff last year as Assistant in Pedodontics (Oral Biology Research) and is at present spending all his time at the Protein Foundation in Boston. He will begin his new research in salivary studies full-time in this hospital this coming year. Recently, Dr. Peter Yen has also joined our staff on a half-time basis as Associate in Orthodontics. Drs. C. Cohen, R. Donahue, E. Rosenberg, W. Hirshom, W. Stoops and T. Hoover have been appointed to our Courtesy Staff.

We have had the pleasure of having associated with us in our clinic this year Dr. Pirkko L. Niskanen from Finland who has worked with us in a visiting capacity. She is returning to Finland in June 1965.

Our house staff appointees for the year 1963-64 were Dr. John Doykos, III from Tufts University School of Dental Medicine and Dr. Raymond Widican from Seton Hall College of Dentistry; 1964-65 — Dr. Bobby Roebuck from the University of Alabama School of Dentistry and Dr. James Mullan from Columbia Dental School. It grieves me to report that Dr. Mullan met an untimely death in August, 1964.

Paul K. Losch, D.D.S.
Dentist-in-Chief

DIVISION OF LABORATORIES AND RESEARCH

The Division of Laboratories and Research, established July 1, 1946, as a first step in the expansion of the Children's Hospital into the Children's Medical Center, includes the Department of Pathology, the Clinical Laboratories, and the Division of Infectious Disease Research. The underlying conception was described in terms of the utilization of the techniques of biology, chemistry, and physics applied to the several disciplines of immunology, experimental pathology, pharmacology, physiology, genetics, and biophysics for the solution of problems concerned with the normal and the sick infant, child and adolescent. The routine laboratory requirements of the several clinical services of the Children's Hospital Medical Center are carried out within the Division of Laboratories and Research. This Division, in addition, conducts its own research activities and provides expert professional assistance to the research programs of the clinical departments of the hospital.

The philosophy underlying the creation of this Division is now being employed to the advantage of the development of the Hospital Center as a whole for the good of the patient, in new endeavors such as the Clinical Research Center and in the plans presently being formulated for the development of research and care on a greatly expanded scale in the field of mental retardation. The realization of such a conception of research and routine within a hospital setting is found in an affiliated unit, The Children's Cancer Research Foundation, which had its beginning in the Department of Pathology and in some of the unfulfilled plans of the Division of Laboratories and Research. In this Foundation, authorities in the sciences basic to medicine and in this case cancer, work individually, in groups or in teams, often in collaboration with medical doctors toward the twin goals of discovery of new means of treatment and hopefully of cure for diseases for which satisfactory treatment is not available, and the generation of new knowledge designed for the prevention or eradication of incurable disease.

In this report, only biographical reference will be made to the activities of the staff of The Children's Cancer Research Foundation, all of whom hold titles by affiliation in the Children's Hospital Medical Center. Most of these are listed under the Department of Pathology.

The Department of Pathology is under the immediate direction of Dr. Gordon F. Vawter, Pathologist to the Children's Hospital Medical Center, and under the Chairmanship of Dr. Sidney Farber, who has been a member of the staff of the Children's Hospital since 1927. The department continues to conduct routine examinations with the standards of research, and regards the role of the pathologist as intertwined to that of the physician at a patient's bedside in contributing to the patient's welfare and to the saving of life. The department has remained a center for teaching of pediatric pathology, and graduates from it hold most of the important posts in the field of Pediatric Pathology in this and many other countries.

Under Dr. Vawter's immediate supervision, the department performed 672 post-mortem examinations during the period of this report. Surgical specimens in the number of 4930 were studied, and almost 700 consultations were given on difficult problems sent in to the department for diagnosis.

The Laboratories of Neuropathology, under Dr. Floyd H. Gilles have flourished. They give expert help to the Departments of Neurology, and Neurosurgery and have been of great help in the solution of neuropathological problems in the surrounding hospitals.

Several changes in personnel occurred. Dr. Chetty Bhaktaviziam, India, left her duties as Assistant Pathologist in June 1963. Dr. Gilles came as Neuropathologist in September 1962. Dr. Jules Edlow and Dr. Hubert Jockin came as Assistant Pathologists in July, 1963.

The research activities of the Department consisted in part of aid given to physicians in other departments, i.e. Dr. Thomas Hall, Dr. George Foley, Dr. Agnes Russfield, Dr. Ira Gore, Dr. Allen Crocker, Dr. Park Gerald, the Blood Grouping Laboratory, Dr. Lithwick, Dr. Kevy, Dr. Eaton, Dr. Putnam, Dr. B. Uzman, Peter Bent Brigham Hospital, the Harvard School of Public Health (virology, radiobiology), the Harvard School of Dentistry, and the Boston City Hospital.

The research carried on by the Department itself included the following studies, which are either completed or still in progress: Studies of primary pulmonary hypertension and development of pulmonary vasculature (Dr. Jockin);

laser irradiation in utero (Dr. Edlow); radioactive Vitamin D, localization; 10 year follow-up renal biopsy in nephrosis; renal biopsies in familial nephritis; lactose diarrhea; tubular dysfunction after partial nephrectomy; mannitol diuresis in "pump" kidney; studies of hypoxia under hyperbaric conditions; pulmonary studies of hyperbaric and respirator lung; experimental renal homotransplantation (Dr. Vawter); intrauterine cerebral lesions (Dr. Gilles).

Future plans for the Department include greater commitment to histochemical, (and possibly cytochemical), fluorescence, and radioautographic methodology, development of electron-microscopic facilities for investigation of materials not of interest to established laboratories, acquisition of certain basic research equipment and expansion of laboratory and office space, including especially Neuropathology.

Neuropathology — Floyd H. Gilles, M.D.

During the period of this report several physicians received part of their training in this subdivision of the Department of Pathology. They were Dr. Alberto Abadi of Venezuela (currently Pediatric Neurologist in Caracas); Dr. K. Sato of Japan (currently pathologist with the Atomic Bomb Casualty Commission, Nagasaki); Dr. J. Allen of the United States; and Dr. E. T. Hedley-Whyte of England. The current resident staff consists of Dr. John Allen and Dr. E. Tessa Hedley-Whyte.

The staff not only studied all the surgical and postmortem material of neuropathologic interest but also served the various clinical departments and continued its intensive teaching program to the residents in pathology, neurology, and neurosurgery, and to Harvard Medical students in their course in neuropathology.

Probably of the greatest long-term importance to neuropathology was the introduction of a new system of processing of neuropathological material. The primary advantage of the new system is its remarkable saving of total time as well as time per individual case. The system was extensively modified by Mr. John Howard, Research Assistant, and is well adapted to premature as well as older neuropathological material. The new system allows the use of a rotary microtome instead of the slower sliding microtome and permits a wider latitude of staining procedures is applicable. A significant reduction has been made in the large backlog of celloidin material left over from previous years. As the field of pediatric neuropathology is still, to a large extent, unexplored, a wider range of screening of the central-nervous-system change in pediatric illness is possible with the more efficient methods of processing now available.

Research projects now in progress include: 1) Effects of cardiac arrest on brainstem nuclei; 2) Potentially treatable neonatal hydrocephalus; Two generally unrecognized causes; 3) Ultrastructural studies of human central nervous system with Dr. Betty Uzman utilizing biopsy and autopsy material; 4) Fetal neural damage study utilizing third trimester fetuses.

Future projects on a clinical level based on material already partially worked up include the study of cerebral abnormalities associated with trisomy D and E, hippocampal malformations and their relation to seizures, and CNS pigment deposition. In view of the firm working relationship with the Department of Tissue Ultrastructure and Neurosurgery further study of the ultrastructural changes in human neurological disease is contemplated. Elucidation of some of the reactions of fetal neural tissue to damage will be attempted with the continuation of the fetal neural damage study.

The Department of Neuropathology now has a firmly established laboratory of neuropathology capable of fulfilling its commitment to the teaching of interested staff members, of screening an increased volume of pediatric neurological material, and of participating in an active experimental program dealing with fetal neural damage, and of contributing to the ultrastructural study of human neuropathological material.

Orthopedic Pathology — Jonathan Cohen, M.D.

This is a joint laboratory program with the Department of Orthopedic Surgery and the Children's Cancer Research Foundation.

Bone is a specialized tissue and hence the study of its diseases creates special problems. The decision to have a special unit for this function proved wise from the very start. At present the Department of Orthopedic Pathology is engaged in medical-student and resident teaching and the teaching of bone pathology to physiotherapy students from Simmons Col-

lege. In addition the Department maintains a program of training residents to become academic or research physicians. At present two men are in this program, which is supported by the U. S. Public Health Service.

The unit is currently engaged in a long-term study of the reactions caused in tissues by the implantation of foreign, i.e., manufactured, materials. This work has taken several directions from the experimental point of view and also has involved the director in intensive administrative and consultative committee work. The experimental studies in progress are: setting up atomic absorption spectrometric analysis techniques for quantitative determinations of elements in metal implants, powders, tissue specimens, and tissue culture cells; setting up a method of analysis in sections of tissue for metal elements by neutron activation (this is being done at M. I. T. with Drs. Broun and Maletskos of the Radioactivity Center); evaluation of the actual and relative toxicity of the least reactive alloys obtainable, using a system of tissue culture and powders of the alloys (this is being done with several collaborators, some in the residency training program); continuation of the program of evaluation of the effects on tissues and on implants of patients from whom implants were removed after long residence in tissues (about 450 cases are being studied); continuation of the studies of corrosion testing *in vitro* under cyclic stress.

A considerable burden of administrative and consultative work in this field has been added to the duties of this unit. These duties include the following: service on the Committee for Surgical Implants, American Academy of Orthopedic Surgeons: idem on the F4 Committee of the American Society for Testing and Materials: idem on the Mass. State Committee on Surgical Implants; participation in workshops by the National Research Council, Skeletal Committee; U. S. Pharmacopeia; and Tissue Tolerance sub-committee ASTM. All of these activities are being intensified because of the current concern by the Federal Food and Drug Agency with devices, and their interpretation of surgical implants as devices to be considered similar to drugs as regards regulation and protection of the public.

Research Division of Infectious Diseases
John F. Enders, Ph.D.

This division is sponsored both by The Children's Hospital Medical Center and the Children's Cancer Research Foundation.

There have been no major changes in professional personnel. Dr. Samuel Datz has continued to serve as Associate. Dr. Ion Gresser who received a Research Career Development Award in 1963 continues as a Research Associate in this Division.

The investigations now in progress or recently completed fall into several categories:

1. Studies on Interferon

It was shown here that interferon is actively produced by suspensions of human leucocytes; it has also recently been demonstrated that these cells are highly sensitive to the antiviral effect of interferon. Although interferon appears to play a role in the recovery from viral infection of some animals, its presence in infected human beings has not yet been demonstrated. Accordingly, materials were obtained from patients in the acute phase of Influenza A_2 infection and in convalescence. A virus-inhibitor having certain of the properties of interferon was found in the throat washings of some of the patients in the acute but not in the convalescent phase of illness. Interferon-like virus inhibitors were demonstrated in spinal fluid specimens from 23 of 58 patients with the clinical diagnosis of aseptic meningitis.

A previous observation indicated that an attenuated strain of measles virus stimulated the production of more interferon in infected cell cultures than the virulent form from which it was derived. Similar data have now been obtained with attenuated and virulent strains of poliovirus and mumps virus. Using a strain of attenuated type II poliovirus it has been found that with increasing age of the donor from whose renal tissue the cells were prepared there is an increasing capacity of these human kidney cells *in vitro* to elaborate interferon. To date tissues have been tested from fetus, newborn and older infants.

Attempts to induce synthesis of interferon by non-viral reagents have failed. No inhibitor was found in cultures of normal uninfected human amnion cells nor in cultures of these cells exposed to particulate materials such as carbon, iron, and starch. Inactivated suspensions of Staphylococcus albus and of living Listerella monocytogenes failed to induce production of interferon in human amnion cell cultures.

2. Rubella Virus Studies

In an attempt to find a system more overt than the human amnion-cell culture method of Weller and Neva and more direct than the interference technique of Buescher, Artenstein and Parkman, Dr. Altan Gunalp, a Research Fellow from Ankara, Turkey, has worked with a number of different cell systems infected with known rubella virus and specimens from patients with the disease. Several strains of rubella virus have been adopted to a line of African green-monkey cells developed in this laboratory. In this system under defined conditions, these agents induce extensive cytopathic changes. The technique has been successfully used in titration of neutralizing antibodies and for assay of infectivity. Evidence for multiplication of rubella virus in hamster renal cell cultures has recently been obtained and suggestive cytopathic changes have been noted. Work has been initiated on the preparation of a rubella virus skin test antigen which it is planned to test in suitable human subjects.

3. Growth of Poliovirus in cell and organ cultures

Multiplication and cytopathogenicity of poliovirus type I in monolayer cultures of human amnion cells and in organ cultures of human amniotic membrane have been compared. In organ cultures a persistent infection without obvious cell injury occurred during several months, whereas as in monolayer cultures the cells were rapidly destroyed.

4. Agents from Patients with Infectious Hepatitis

Two agents, originally isolated from fecal specimens of patients with typical infectious hepatitis by Dr. H. B. Dull in this laboratory, have been subjected to further efforts at characterization. Human embryonic thymus-cell cultures were used for the virus recovery and the agents have now been adapted to various tissues including primary human embryonic kidney, human kidney, human amnion, human embryonic lung, green-monkey kidney, and chick embryo fibroblasts as well as stable amnion and monkey kidney lines and HeLa cells. In these cells the rapid accumulation of acid and the appearance cytopathic effect in infected cultures have been characteristic findings. The agents survive heating to 56°C for 30 minutes with only a slight drop in titer, are stable at 4°C, and through a pH range from 2 to 8 remain insensitive to trypsin, DNAse and RNAse. They show ether sensitivity, multiply in embryonated hens' eggs with a questionable lethal effect, produce no disease in suckling and adult mice, rabbits or chickens, and pass through a 50 mu filter. To date, both neutralization and complement-fixation studies with patients' sera have been negative.

Two adenoviruses (types 4 and 7) have been recovered from postmortem hepatic tissue of two boys with congenital agammaglobulinemia who died with a fulminating so-called "giant cell" hepatitis. The significance of these isolations has not yet been ascertained.

5. Studies on Measles Virus

Dr. Cedric Mims, a Rockefeller Foundation Travelling Fellow from Professor Fenner's Department of Microbiology at the Australian National University in Canberra, has conducted studies of the pathogenesis of measles infection in monkeys. Utilizing the fluorescent antibody technique, he has sought evidence of measles-virus antigen in macrophages obtained from peritoneal washings and in a variety of tissues taken from monkeys after infection. Although these studies are incomplete at present, he has demonstrated specific fluorescence in cells from spleen and lymph nodes.

Virus has been isolated (in primary human amnion-cell cultures) from the washed leucocytic fraction of peripheral blood of 10 of 11 patients in the first 24 hours of measles exanthem and in 1 of 8 patients in the second day of rash. This work was conducted by Dr. Ion Gresser, Research Associate in this Division, while he was on a year's fellowship under Dr. Charles Chany at the Centre de Recherches sur les Virus in Paris, but was completed on his return to this laboratory.

The effect of transplacentally conferred passive immunity to measles on natural infection in the first year of life has been studied with the cooperation of Dr. Warren Sisson, a Boston pediatrician. His clinical records and those of a local infectious disease hospital documented the rarity of measles before the sixth month of life in infants whose mothers had previously had the disease. In serological determinations performed on the sera of babies 4, 5 to 6 months of age measles antibodies (complement-fixing and neutralizing) could not be detected by our usual techniques though these infants maintained their passive immunity and proved resistant to infection with vaccine virus. In addi-

tion, a continuing resistance to such infection persisted to the ninth month of age in all but one of 14 such children.

6. Measles-Virus Vaccines

Continuing surveillance of the first 11 children vaccinated in October, 1958 with attenuated virus has revealed no diminution of prophylactic efficacy. Antibody titers have remained essentially stable over this 5 year period. There have been no booster inoculations administered, but one exposure to a virulent epidemic of natural disease occurred 3 years 7 months after immunization. Efforts have continued to assess the clinical and antigenic effects of vaccine in adults. To date 53 persons over 21 years of age have been studied because of a negative past history of measles. When their initial sera were tested, 26 of these adults (50%) possessed serologic evidence of previous measles infection. Of the remaining 27, all but 2 have received a single injection of live-virus vaccine alone, whereas 2 were given gammaglobulin simultaneously. A satisfactory antibody response was documented in 100% and in none was clinical reactivity unduly severe. Indeed, in this small series the incidence, the peak and duration of fever were less than in younger subjects.

In relation to the development of attenuated measles virus vaccine it is desirable to have additional means of identifying attenuated variants from virulent naturally occurring strains. Studies along these lines are in progress in this laboratory. Several different "markers" have been defined, but the correlation of these with virulence for monkeys remains to be elucidated. Investigations of the relative reactivity in man of vaccines composed of clonal lines of the currently available attenuated measles virus has been undertaken. According to present plans stock vaccines will be manufactured with these livers and tested in small groups of susceptible children. The well-established fact that immunity against measles is of long duration even in the absence of intercurrent exposure has suggested the possibility that the agent remains latent in the tissues following recovery from an attack. Tissues from monkeys and human beings with previous history of measles are being cultivated over long periods in attempts to reveal the presence of measles virus.

7. Effect of hormones on Viral Multiplication and Cytopathogenicity

Clinical evidence indicates that alteration in sex hormonal balance may affect the inception and course of viral disease (e.g. poliomyelitis in pregnancy). Few observations have been made on the effect of sex hormones in cell cultures infected with viruses. A study of this sort has recently been initiated, employing polio and measles virus together with estrogen, progesterone, and other sex hormones in systems of primary cell cultures. Definite effects have already been observed which encourage further work along these lines.

8. Antiviral factors derived from bacteria and molds

Experimental evidence previously published demonstrated that a factor from a corynebacterium of an unidentified species interferes with the intracellular stages of replication of two Group A arboviruses, Sindbis and Chickungunya. This factor did not interfere with the cytopathogenicity of seven unrelated viruses. Extension of these studies revealed that viral inhibitory factors could be isolated from several different bacterial species including representatives in both gram negative and gram positive groups. All of the factors are trysin-sensitive and therefore seem to involve a protein constituent. Each factor inhibited certain viruses and not others. Experimental results indicated that the inhibitory activity of the E. coli factors and S. typhimurium occurred after viral penetration and prior to viral release while the factors from C. diphtheria and C. xerosis appeared to combine directly with the susceptible virus in a manner that could be reversed by lowering the pH.

Studies demonstrated that the factor from E. coli 0111 inhibited the multiplication of both human amnion cells and HeLa cells. There was no histologic evidence of cellular damage when this substance was added to fully confluent sheets of human amnion and HeLa cells. The E coli 0111 factor also markedly decreased cellular uptake of 1_{131} labeled 5-ido-2-deoxyuridine (1*DU). Both of these effects as well as the previously mentioned suppression of vaccinia replication could possibly be explained by interference with cellular DNA metabolism.

Inhibition of both the CPE and replication of Sindbis and vaccinia by high concentrations

of certain nuclei acid derivatives was demonstrated. Thymidine triphosphate inhibited vaccinia while deoxyadenosine inhibited Sindbis. Both components were used at a concentration of 3 μ mols/ml.

From cultures of a strain of Penicillium cyclopium obtained as a contaminant of a cell culture, a fraction inhibiting *in vitro* growth and cytopathogenicity of certain arboviruses has been prepared. Inhibition occurs even when the factor is added 24 hours after viral inoculation. The fraction has also been shown to protect mice from lethal infection with West Nile virus and to exert a therapeutic effect in such animals even when administered 24 hours after viral inoculation.

One of the 5-halogenated pyrimidines has been selected to study the effects of this group of compounds on *in vitro* infection with DNA viruses. With careful dose-time relationships to be observed, this compound (I. D. U.) exerts a regular inhibitory effect on a number of such viruses assayed, herpes simplex, vaccinia, and some of the adenoviruses.

9. Cell transformation in vitro by viruses

A reproducible epithelioid transformation in primary cultures of human renal tissues infected with virus has been observed. This transformation is characterized by an abnormal growth pattern, a greatly accelerated growth rate, and chromosomal aberrations (analyzed by Dr. George Yerganian and R. Kato of the Children's Cancer Research Foundation) of the cells. Work is continuing with SV40 transformed hamster renal cells. Clones of cells of distinctive morphological characters have been established from the originally mixed cell populations of the transformed cells. Experiments have been carried out to determine whether this agent is capable of transforming cells *in vitro* and is oncogenic in hamsters and will be continued. So far, although a stimulation of cell growth has been observed, clearly defined transformation has not been observed. Cells exhibiting the stimulatory effect failed to produce tumors in the hamster cheek pouch. Cell-virus relationships have been studied during the course of those cytolytic proliferative and transforming changes that occur in this system. Interferon has not been demonstrated in the chronically infected cells. As compared to cells in uninfected cultures, transformed cells exhibited increased resistance to injury by SV40 and an altered cytopathic response to infection with several RNA viruses.

With Dr. Jeana Levinthal (of Harvard Medical School, Department of Bacteriology) an indirect immunofluorescent technique has been shown to be sensitive for the detection of SV40 virus in infected human and monkey kidney cells. In addition complement-fixing antibody has been shown to be present in the sera of rabbits and guinea pigs hyperimmunized with the virus.

Three clones from a line of SV40 transformed hamster kidney cells have been developed and studies from the point of view of their morphologic oncogenic and antigenic properties. Morphologically each clone was distinguishable from the other two in respect to cell form and appearance of the colonies when plated out. When implanted in the hamster cheek pouch, all three clones induced tumors. Histologically they were either sarcomas or mixed tumors consisting of adenocarcinomatous and sarcomatous tissue. Since each of the clonal lines was derived from a single cell (cloning was done 3 times), the development of mixed tumors was remarkable. Infectious virus was not demonstrable by the usual techniques in any of the three clones but was occasionally revealed in all by application of the overlay procedure using African green-monkey cells.

Cellular antigens have been demonstrated in these clones in complement fixation tests carried out in collaboration with Dr. Albert Sabin, using serum from tumor-bearing hamsters. Evidence for altered antigenicity of SV40 transformed hamster kidney cells has been obtained in experiments now in progress in which the development of tumors in various organs of hamsters receiving intravenous injections of cell suspensions was followed. A plasma cell reaction around or within the tumor mass was observed to occur between the first and second month after implantation.

Transformation of cells derived from several different organs of the hamster, i.e., heart, lungs, spleen, liver, has been effected. Determinations of the oncogenic capacity and type of tumor generated by these various lines are in progress as are experiments on the effect of interferon and specific viral antibody on transformation. Preliminary results show that when these reagents are added a few days after infection of human renal cells with SV40 virus,

cytopathic effects are largely suppressed, but subsequent transformation is not usually prevented. Transformation of human fetal brain cells by SV40 has been accomplished.

Cellular complement fixing antigens have been demonstrated in SV40 transformed human renal cells in collaboration with Dr. Sabin. The antigens appear to be qualitatively similar to those present in transformed hamster cells.

A filterable agent has been isolated from a transplantable spontaneous carcinoma of the Syrian hamster associated with an acute hemolytic anemia. Under investigation are its identity as a virus, its behavior *in vitro* in a variety of cell systems and its potential as an inducer of cell transformation.

The effect of thymectomy on tumor induction by polyoma virus has been investigated in a preliminary manner. Animals thymectomized soon after birth and inoculated with virus 3 weeks later developed tumors within about two months. No tumors have so far appeared in inoculated control animals.

Attempts have been made to transform human and hamster cells with adenoviruses 7, 12, 18, and Rous sarcoma viruses. Results so far have been equivocal or negative.

Since rubella virus induces a chronic infection in cells, its possible transforming effect was investigated. Human renal cells were employed and inoculated with rubella virus. At intervals of about 2 weeks the cells were subcultured. Continuing virus multiplication was demonstrated throughout 12 serial cell passages, but no indication of cell transformation was observed.

During the course of experiments with PVM virus it was shown that this agent produces rather characteristic changes in cultures of cells from certain tissues of the hamster (e.g. skin and muscle) but not in others (e.g. kidney cells). Growth of virus occurred when CPE was present but not in its absence. Among various human embryonic tissues studies viral growth occurred only in skin and muscle cultures but without CPE. In this system stimulation of cell growth was apparent and observations of this system are being extended to determine whether frank transformation may eventually occur.

10. Miscellaneous Studies

A simple rapid method for the production of viral antibodies in mice has been worked out utilizing Ehrlich tumor cells as the source of peritoneal fluid containing high concentrations of neutralizing antibodies against previously injected viral antigens.

The growth of poliovirus strains in cotton-plugged monkey kidney cell cultures was found to be slower than in the usual screw-capped tubes. The degree of retardation depended on the virus strain and the cell lot. The factor responsible was bicarbonate concentration and the effect was far more marked on attenuated strains than virulent ones. The delayed increases in virus production resulted from slower intracellular synthesis.

Experiments by Dr. Ion Gresser in France in association with Dr. Charles Chany demonstrated that both virulent and attenuated poliovirus Type I could be propagated in suspensions of human leucocytes. This work has been extended by Dr. Gresser after his return to this laboratory. Dr. Gresser has also investigated the reported incapacity of intact human amniotic membrane (Virology, *15*, 312, 1961) to support *in vitro* multiplication of poliovirus. Growth of the agent has been demonstrated in this system and an explanation provided for its early reported failure to multiply under these conditions.

11. Clinico-biological Studies

As in the past, patients entering the Children's Hospital suspected of suffering from viral infections continue to be studied by laboratory methods. Since the late summer of 1961 over 40 agents have been isolated from patients with a variety of symptoms and are at present under study. Enteroviruses have been recovered from 27 of 47 cases of aseptic meningitis occurring during this period. In a study of 5 cases with classical Guillain-Barre syndrome viral agents were isolated from each. In two patients viruses were recovered from the spinal fluid which exhibited on pleocytosis. Although the viruses isolated from the five cases were not homogeneous in respect to species, the association of micro-organisms of this sort with this syndrome warrants further investigation.

Studies of rubella patients have yielded viral agents using the interference technique recently reported by workers at the Walter Reed Institute for Medical Research. This newly described method is being tested as a possible aid in the isolation of viruses from patients with infectious mononucleosis.

Several cases of fatal disseminated herpes simplex virus infection of the newborn have been investigated in an effort to gain further knowledge of the pathogenesis of this condition. A complete absence of maternal antibody to this ubiquitous virus seems to be the common feature in those infants succumbing to this infection.

An outbreak of respiratory illness among Harvard University students was investigated in late winter and early spring of 1962. Influenza B viruses were shown to be the responsible agents of both viral isolation and serological response among patients at the Stillman Infirmary.

In a preliminary survey throat swabs were collected from 49 children less than 3 years of age with exudative tonsillitis and cultured for bacterial pathogens. Virus isolations were also attempted in 27 of these children. Group A streptococcus was recovered from 14%, other bacterial pathogens from 24% and viruses from 19 percent of those examined.

A study in collaboration with the Department of Cardiology of the Children's Hospital on the suspected correlation between mumps virus infections and congenital heart diseases, in particular endocardial fibroelastosis, is in progress.

Specimens of bone marrow and blood from patients with onset of acute leukemias have been studied in tissue cultures. From materials from two patients, agents, as yet not identified, have been recovered.

Agents have been isolated from patients with paralytic disease following administration of Type III oral poliovaccine (one patient yielded Coxsackie A9 and two patients Type III poliovirus).

Plans for the Future

The studies now in progress will, of course, be continued and expanded as the result obtained indicate.

A major portion of the research effort will be directed to study of certain oncogenic viruses and the behavior of cells transformed by them. Attempts will be continued to propagate the agents of serum and infectious hepatitis. Work on the virus of rubella now in progress will also be extended.

Honors

Dr. Enders was given several awards and other honors. These were:

Howard Taylor Ricketts Award	1962
Dieselmedaille (Gold)	1962
Robert Koch Medaille	1963
Scientific Achievement Award American Medical Association	1963
Presidential Freedom Medal	1963
Elected Membre Correspondant Etranger de l'Academie Nationale de Medecine (France)	1964
Elected first Honorary Member of the Hartford Medical Society	1963
Awarded D. Sc. (hon.) University of Pennsylvania	1964

Clinical Laboratories—Harry Shwachman, M.D.

The research programs in this laboratory are carried out in part with the Children's Cancer Research Foundation.

The main problems investigated deal with various aspects of cystic fibrosis and the malabsorption syndrome. A new type of instrument (Crosby capsule and Rubin tube) introduced six or seven years ago, makes it possible to biopsy intestinal mucosa in infants and children. During the past 5 years we have biopsied at least 350 infants and children. Aside from the histological appearance, we have recently studied the enzyme activity of the intestinal mucosa, especially the disaccharidase enzymes in a variety of conditions. Only one example of a child with sucrase and isomaltase deficiency was found. This patient is apparently the first child in this country with this type of congenital enzyme deficiency diagnosed by a direct quantitative assay of intestinal mucosa. This rare condition is inherited as a Mendelian recessive. The great majority of patients we studied had fairly good disaccharidase activities with the exception of those with celiac disease. In the acute stage all the enzymes studies are markedly diminished. In the recovery stage there is a significant improvement, but with values still reduced. These studies help in understanding the lack of tolerance to certain sugars, especially lactose, when given in large amounts to patients with celiac disease. Dr. William McNary of the Department of Anatomy at Boston University performed some electron microscopic studies on material supplied. The assistance of Dr. Jale Duvenci, who has spent many years in studying histochemistry of polysaccharides, was also most helpful.

This department is still very much interested in celiac disease. The diagnosis is now based on the histologic appearance of the intestinal mucosa, which supports the clinical and previously abnormal and nonspecific laboratory findings.

The work in malabsorption led to a collaborative study with Dr. Diamond and his group which demonstrated a defect in intestinal absorption in patients with severe iron deficiency anemia.

A new syndrome was recognized here five years ago and after collecting additional experience with patients a report was prepared in collaboration with Dr. Diamond. The first subjects were studied in our Nutrition Clinic and labelled instances of atypical cystic fibrosis. The characteristic features were failure to thrive, pancreatic insufficiency, normal sweat test, lack of pulmonary signs or symptoms, and the presence of anemia, thrombocytopenia and neutropenia. To date we have recognized seven patients. This may be familial (three cases in one family) and the disease is not fatal (no deaths and none anticipated).

Research activities in cystic fibrosis continue. We now have more than 65 patients with this disease over 17 years of age; these patients have been studied for an average period of 12 years. Of interest is the larger number of male survivors; seven are married and many are attending college. At present there is no way of detecting the heterozygote for cystic fibrosis. Studies on the analysis of various tissues from patients and relatives suggest that analysis of the hair and fingernails for sodium, potassium, calcium, and magnesium may provide a means of meeting this problem. Studies for improving diagnostic techniques for cystic fibrosis continue. The routine apparatus developed here is being duplicated and sent to various centers. Improvement in measuring conductivity of sweat with commercially-available standard equipment has made it possible to use this simple procedure. The study of hair of newborns as well as of older children makes it possible to establish the diagnosis of cystic fibrosis based on the concentrations of the four elements listed above.

With the assistance of medical students this past summer an attempt was made to determine the effect of the various agents used by aerosol in our therapeutic program on ciliary action. The same type of apparatus was used as in determining the effect of cigarette smoke on ciliary action.

The use of a new type of fat, medium chain triglycerides (M. C. T.) is the subject of another clinical study on patients with malabsorption. A milk preparation is made up with a caloric value of 30 calories per ounce. Patients on skim milk the caloric value of which is 10 calories per ounce may be able to tolerate this new preparation.

Dr. Clarke has investigated the chemical changes that take place in the gall bladder bile in patients with cystic fibrosis. This interest in bile led to his appointment to the committee on standardization of bilirubin (American Academy of Pediatrics), and to a study of the purification and analysis of bilirubin.

The atomic absorption spectrophotometer in charge of Mr. Kopito has been used in clinical problems other than the study of cystic fibrosis. A number of new observations have been made:

1. The simple and accurate measurement of a variety of metals in various tissues. For example, over 50 blood calcium and magnesium determinations can be performed in one afternoon with an accuracy unattainable by chemical analysis.
2. Study of patients with heavy metal poisoning, and Wilson's disease.
3. The study of the effect of chelating agents.

The activities in bacteriology include the interesting observations on protoplasts. These small rounded bodies have been observed in blood cultures obtained in a variety of very ill patients, especially terminally ill leukemia or cystic fibrosis patients. In some cases the protoplasts in time revert to the original microorganism in culture, but more often these bodies gradually die out in artificial media.

Dr. Shwachman was granted several honors; these were:

1. Elected President of the New England Pediatric Society 1964-65.
2. Re-elected Chairman of the Medical and Scientific Advisory Board of the National Cystic Fibrosis Research Foundation for 1964-65.
3. Appointed Trustee and member of Executive Board of the National Cystic Fibrosis Research Foundation, 1964.
4. President of the Cystic Fibrosis Club, 1962-63.

5. Chosen for the Fried Lectureship.

Plans for the Future

a) To improve the administrative aspects of the clinical laboratory. The system of recording on wards, the system of delivery and handling of specimens, the methods of charging, and accounting techniques should be reviewed. We have already suggested automation to Mr. Held and had a long conference with the I. B. M. representative.

b) To acquire additional space. There is great over-crowding of all laboratories. Each year new procedures are added, thereby increasing our work load and the size of our technical staff, all in the same quarters assigned 15 years ago.

c) To introduce new techniques, including additional methods of automation in the clinical laboratories. The problem here is the number of determinations versus the expense of installation.

d) To introduce techniques of immunology on a routine basis. This service can be provided by part payment of a technician in Dr. Janeway's immunology laboratory.

e) To obtain a suitable assistant with the title of Assistant Director of Clinical Laboratories.

The clinical laboratory continues to provide 24 hour coverage. The volume of work increases each year and is a reflection of the increased number of patients seen in our center and the more complicated nature of their illnesses. The personnel has been increased to meet the increased load. The space problem is the most critical at present.

Sidney Farber, M.D.
Pathologist-in-Chief

House Staff

October 1, 1962 to July 30, 1963

Dr. Mustafa Alkan	*Turkey*
Dr. Leopoldo Miranda	*Mexico*
Dr. Pedro Albujar	*Peru*
Dr. E. Mei Shen	*Formosa*
Dr. Kazuyoshi Sato	*Japan*
Dr. David Murphy	*Canada*
Dr. Seok Suh	*Korea*
Dr. Alberto Abadi	*Venezuela*
Dr. Salvador Jaimes	*Columbia*
Dr. De La Pena	*Mexico*
Dr. Zygmunt Tomkiewicz	*USA*
Dr. Andrew Dekker	*USA*
Dr. Harry McCombs	*USA*

House Staff *July 1, 1963 to June 30, 1964*

Dr. Blaise Favara	*USA*
Dr. Seok Suh	*Korea*
Dr. Robert Fung	*Hong Kong*
Dr. Eleanora Galvanek	*Argentina*
Dr. R. V. Junnarkar	*India*
Dr. Norton Lithwick	*Canada*
Dr. Richard Lindquist	*USA*
Dr. Marcia Aires	*South Africa*
Dr. Paul Raslavicius	*USA*

July 1, 1964 to September 30, 1964

Dr. Francis King	*USA*
Dr. Seok Suh	*Korea*
Dr. Shirley Hazell	*Vancouver, B. C.*
Dr. Jean Duquella	*Haiti*
Dr. E. Tessa Hedley-White	*England*
Dr. John Allen	*USA*
Dr. Hilary Evans	*USA*

CLINICAL LABORATORIES
Foreign Exchange Technicians

Jennifer M. Round	*Australia*
Frances Yamane	*Hawaii*
Mirja Nieminen	*Finland*
Christian Hirup	*Denmark*
Ruth Hamburger	*Israel*
Marissa F. Figueroa	*Philippines*
Mila A. Atendido	*Philippines*
John Barthelemy	*France*
Onwichekwak OKigwe	*Africa*

CLINICAL LABORATORIES *House Staff*

Dr. Reginald Townley	*Australia*
Dr. Erin Mehta	*India*
Dr. Mary McKenzie Pollock	*Scotland*
Dr. Daniel Katznelson	*Israel*
Dr. Earl Cooperman	*Canada*
Dr. Sami Kassim	*Iraq*
Dr. Masonri Shiraki	*Japan*
Dr. Gunaydin Erbengi	*Turkey*
Abbas Mahmodian, Ph.D.	*Turkey*
Dr. Ayler Gunalp	*Turkey*
Dr. Daniel Wiseman	*USA*
Dr. Alexandria Roura	*Puerto Rico*
Dr. Barbara Donnison	*England*

POST-DOCTORAL FELLOWS

The following received training in the Research Division of Infectious Diseases from Oct. 1, 1962, to Sept. 30, 1964.

David H. Carver	*USA*
Martha J. Leas	*USA*
Kirash Naficy	*Iran*
H. Bruce Dull	*USA*
Harvey M. Shein	*USA*
Ion Gresser	*USA*
Altan Gunalp	*Turkey*
David J. Lang	*USA*
C. A. Mims	*Australia*
George Diamandopoulos	*Greece*
Robert J. Warren	*USA*
Anthony B. Newburn	*USA*

A most striking trend during the past two years has been the increased sense of forward movement and optimism on the part of the staff. After the recent period of reappraisal and consolidation, when the staff waited impatiently while pressures generated by very real needs — for space, for personnel, and for new activities — seemed to have little chance of relief, there is renewed confidence that some of their dreams can be realized. This subtle change in institutional climate has many causes, but principally the sight of construction in progress is tangible evidence that the Trustees, encouraged by the marked administrative improvements made by Dr. Cronkite and his able staff, have given the signal to proceed on the long-range program of construction which is so urgently needed. In addition, the opportunity to tap new financial resources has greatly improved the outlook for future progress — professorships as a result of Dean Berry's strenuous efforts through the Program for Harvard Medicine and new programs of the National Institutes of Health, in the development of which Dr. Farber has played a very important role. The period from now until the 100th Anniversary in 1969 promises to be a very challenging and exciting one, and the general feeling of enthusiasm greatly enhances our ability to attract and hold the able people upon whom the continued excellence of the Children's Hospital Medical Center really depends.

Our Heavy Load of Medical Service

A second trend has been the steadily growing load of service upon the staff, a load which can only be adequately met when better facilities provide the space to permit an increase in the size of the staff. That the load continues to grow despite inadequate facilities and an extraordinarily heavy burden of work upon many members of the nursing and medical staffs and their supporting services is evidence both for the intensity of the need and the high quality of service being rendered under very suboptimal conditions. This burden of service is particularly heavy in four general areas:

1. *The Medical Emergency Clinic.* The demands upon this clinic, as in other urban hospitals, continue to grow inexorably — from 17,324 visits in 1962 to 27,640 in 1964, an increase of approximately 60 percent in two years. Only a small percentage of these visits are for true medical emergencies; the majority are simply for the ordinary illnesses, complaints, and anxieties for which people go to see a doctor. We believe that this reflects the desperate need of the urban population, with its higher rates of illness, poorer housing conditions, and greater socioeconomic problems, for adequate medical care in the face of the general flight of practicing physicians to the suburbs. Although this clinic provides a magnificent training ground for future physicians in the care of patients with common illnesses, its spectacular growth highlights a problem in the distribution of medical care which is common to all our major cities and which troubles all thoughtful people concerned with public health. This problem must be carefully analyzed so that adequate provision can be made to meet the tremendous community need which it reflects, as we plan the construction and staffing of new emergency facilities.
2. *The General Medical Clinic.* This clinic, functioning every morning on an appointment basis, serves mainly as a consultation clinic to physicians in New England, principally in the Greater Boston area. Although the number of patients coming to it has changed very little in recent years, there has been a considerable shift in the types of cases being referred. More and more of these are children with behavior problems, learning disabilities, or suspected deviations in development. This probably reflects the lack of training most practicing physicians have had in the diagnosis and management of such disorders and the lack of adequate facilities and personnel for the psychiatric treatment of children in most communities. The effect upon our institution has been to place inordinately heavy demands upon our neurological, psychiatric, and psychological consultants and a far heavier demand for time-consuming case work with the families upon the Social Service Department. The growth of the case load in the Adolescents' Unit probably reflects a similar unfamiliarity of most physicians with adolescent problems.
3. *Special Clinics.* Probably the most unique service which the Children's Hospital Medical Center performs for this region is to

provide expert medical supervision for children with chronic diseases. In order to provide continuity of care and to permit continuing research, aimed at a better understanding of the natural history of these various diseases and the extent to which this can be affected by treatment, these children, whose day-by-day care is usually given by physicians in their own communities, are seen periodically in one or another of our special clinics, headed by a particularly qualified member of the staff. To provide the kind of supervision needed, someone must be on call day or night to deal with sudden inquiries from parents or physicians, and a social worker to assist these families is usually essential. As methods of treatment have improved, and consequently more and more children with serious chronic diseases survive into adolescence, wholly new problems in management arise, and the burden upon each special clinic increases as its roster of patients grows larger. Many such clinics are supported to varying degrees by special voluntary groups like the Massachusetts Heart Association, the New England Kidney Disease Foundation, Aid to Neuro-muscular Research, and the National Cystic Fibrosis Research Foundation, but even greater support for essential professional staff in many of these clinics is urgently needed to permit us to give the children, parents and physicians of New England the service they require and need.

4. *In-patient Services.* Several years ago an analysis of the utilization of the in-patient medical services of the hospital suggested that improvement in preventive and curative medicine in local communities and shortening of the average hospital stay had lightened the load upon medical beds sufficiently to permit us to enlarge the courtesy staff and thus make the facilities of the hospital available to a larger group of physicians qualified to care for their own patients in its wards. This move, together with a general simplification of admitting procedures, has been followed by an increase in occupancy of our beds and by the admission of a greater number of private patients. This means a considerable increase in the number of responsible physicians with whom the house officers must deal and communicate in the care of patients, a factor which has certainly added to the complexity as well as the volume of their work. To the extent that this increase in the number of private patients has diminished the house officers' sense of personal responsibility for care of their patients it has diminished the educational value of their training experience. Nevertheless an increase in the number of private patients in the wards of teaching hospitals is an almost universal trend and one to which we believe accommodation can be made with little sacrifice of either the teaching program or the quality of patient care. By and large, our wards have been extremely full and very busy during the past year, with a heavy burden of work upon both doctors and nurses. One of our house officers, whose previous experience had been in a large city hospital, said that he saw more seriously ill patients in six weeks on one of our main wards that he had seen in a year at his previous post.

Another trend, which is not new, but is the direct outgrowth of the growing complexity of medical care as new methods of treatment extend the lives of children previously considered hopelessly ill, is the growing pressure upon our limited space by the increasing number and variety of personnel needed to care for patients and to provide essential supporting services. Everywhere one looks in the hospital, serious overcrowding exists — in nursing, in Social Service, in the clinical laboratories, or in the accounting offices, to mention a few. The Department of Medicine is no exception, and the shortage of office and laboratory space makes it impossible to add the personnel needed to cope with the increased work load, let alone to do the research which is essential if we are to solve the medical problems which create the burden of illness which we must treat. Although a start has been made on our building program, it will be several more years before we can expect appreciable relief for this chronic shortage of space.

Educational Activities

Medical Students. Teaching is a major obligation of the Hospital. For many years the basic teaching program in Pediatrics for Harvard Medical students, established in Dr. Blackfan's day, has continued with very little change. In

1964 a major revision of the Harvard Medical School clinical curriculum was undertaken, and the change, although it has not diminished the number of hours spent by the student in pediatrics, has drastically altered the teaching program. This has had the salutary effect of involving all departments of the Hospital in teaching the total care of the child, and has stimulated a great deal of thought about the methods and philosophy of teaching.

House Officers. A great educational advance was made when the Administration made the decision to raise house officer salaries to more nearly adequate levels in June, 1963. House staff salaries, or lack of them, had been based on the notion that the hard work itself and the educational experience of working in an outstanding hospital were sufficient reward. In a day when every holder of a Ph.D. degree can get a well-paid job when he graduates, and often a good fellowship while he is working toward his degree, this philosophy has become outmoded. Interns and residents are not only students of medicine, but are productive members of society, providing the bulk of medical care for patients with serious illnesses. They ought to receive adequate compensation, comparable to that earned by other young professionals, such as teachers and lawyers, at the start of their careers. More than four years out of college, often with wives and children, they deserve better stipends than they are receiving, although the salary increases which have gone into effect have relieved their acute financial problems somewhat. One result is that fewer applicants now turn down an offer of a residency position at the Children's Hospital Medical Center for purely financial reasons.

Part-time Residencies for Married Women. An interesting phenomenon of recent years has been the growing group of young women whose medical careers had been interrupted by marriage and the raising of young children, returning to complete their pediatric hospital training by working on a part-time basis. This development, which was given great impetus by President Bunting's plans for the Radcliffe Institute for Advanced Studies, is particularly important in view of the present doctor shortage. We are pleased that it has been possible to introduce sufficient flexibility into our educational program to meet the needs of an able group of future physicians, whose obligations to their families must be met simultaneously.

Post-residency Fellowships. Lengthening of the period of medical education, required by the tremendous expansion of scientific knowledge, has not been accomplished by extending the duration of medical school instruction, but rather by lengthening the period of post-doctoral training. For most people preparing themselves for careers in pediatrics, this covers a period of three years after graduation, one as an intern and two as a resident. There next comes a period of two years in government service, for many, which is often followed by advanced fellowship training.

It is in this last period of post-residency fellowship training that there has been the greatest recent expansion of medical education. Two types of advanced fellowship training have developed in our institution. The first is particularly for those heading for full-time careers in teaching and research. For them, a period of several years will necessarily be devoted to advanced training in one of the basic medical sciences or in clinical research in a special field such as cardiology, hematology, or endocrinology. These fellows contribute in an important way to the life of the hospital, not only through their research contributions, but as a pool of very able young men and women who are stimulating teachers and who provide clinical supervision in their special fields to our house officers and medical students. Fortunately, funds for the training of future research workers are comparatively abundant, and most such fellows now receive adequate stipends during this period. However, as a hospital which attracts many foreign fellows, we have a special problem since government funds for their training are very limited. Quite recently, a second type of fellowship training has developed. This recognizes the special demands of pediatric practice and the inadequacy of the usual two-year hospital residency program with its emphasis on the care of serious illness in the hospital as sole preparation to meet these demands. There are now four such programs in our hospital open to those who wish to prepare themselves more adequately for the care of general pediatric patients. Each of these fellowship programs is built around one or another portion of the Ambulatory Services of the Hospital. Fellows, although primarily enrolled in which-

ever program most nearly meets their own particular needs, may elect some work in the other programs so as to design a year's educational experience most suitable for them. These four programs are:

1. Residencies or Fellowships in the Medical Out-patient Department under the direction of Dr. Thomas E. Cone, Jr.;
2. Fellowships in Adolescent Medicine under the direction of Dr. J. Roswell Gallagher;
3. Fellowships in the Family Health Program under the direction of Dr. Joel Alpert;
4. Fellowships in Psychiatry for pediatricians under the direction of Drs. George E. Gardner and Tully Benaron of the Department of Psychiatry.

The existence of these fellowship opportunities, for the last three of which there are outside supporting funds, is recognition of the fact that the practice of comprehensive pediatric medicine or of family medicine requires a degree of sophistication in dealing with the problems of physical, emotional and psychological development; in guiding the relationship between the child and his parents at different ages; and in preventive medicine which simply cannot be acquired in two years of intensive hospital training. These fellowship programs in ambulatory medicine are based on the acquisition of specialized knowledge about people and their behavior, rather than the specialized knowledge about specific diseases or organ systems which characterizes the first type of fellowship training.

Continuation Education of Practicing Physicians. The Hospital also has a major responsibility for post-graduate, or better continuation education for physicians who have already completed their training and are in active practice. This is provided in several ways:

1. Weekly throughout the year at Grand Rounds and Clinicopathological Conferences, held from 11 a.m. to 1 p.m. every Wednesday and open to all physicians.
2. By short intensive courses. Three are now given each year: one in General Pediatrics for a week in January; the second jointly with the Department of Obstetrics and the Boston Lying-in Hospital under the auspices of the State Department of Public Health on problems of perinatal health for both mother and child; the third, a very successful one week's course in adolescent medicine, which has been offered during the spring for the past two years.
3. Through a constant stream of informal contacts, by telephone, by letter, or by conversation between members of the staff and physicians who are troubled about health problems in their patients.

Education for Foreign Physicians. Finally, in the modern world, with Boston presently looked on as a sort of medical mecca, we have a very real obligation to assist in the training of the best among the multitude of foreign physicians who are flocking to this country for medical training. Our contributions to this effort are made at three levels:

1. Through post-graduate courses organized under the auspices of the office of Courses for Graduates of Harvard Medical School. Ever since 1947 we have offered a formal course, which usually runs from October through March, for a group of about eight students, mostly from foreign countries. This course emphasizes the scientific basis of modern pediatrics and serves as an introduction to American pediatrics for many younger students to prepare for subsequent residency training, while for those with greater experience, it provides an opportunity to catch up with the rapidly changing scientific background of modern pediatrics.
2. Through residency training for those whose familiarity with the English language and clinical background are sufficient.
3. Through advanced clinical or research training for those established pediatric teachers who come here primarily to learn more about a special field.

It is of interest that our former post-graduate students include several professors of Pediatrics and the President of one of the largest universities in Southeast Asia. Some individual examples may serve to underscore the importance of what we are doing in the education of foreign students. Two of our former fellows are providing the pediatric care and health supervision for all the children in the Virgin Islands and American Samoa. A student from Latin America in the post-graduate course a few years ago went on to take a year of pediatric residency training in our hospital and followed this with two more years of training in pediatric neurology. Upon returning to his own

country, he became its first pediatric neurologist and has made important contributions to the teaching of pediatrics there. Another student, sent by the Organization of American States from Latin America, completed the postgraduate course and then devoted the remaining nine months of his stay to intensive study of the techniques of blood grouping and blood transfusion. He is now returning to his native city, well qualified not only to serve as a member of the pediatric staff of a newly completed hospital, but also to organize and operate an essential facility of a modern hospital — its blood bank.

Last winter just after Christmas I received an invitation to visit St. John's, Newfoundland, from a former resident, who left here in 1954 to become the first pediatrician in Newfoundland. This Atlantic province of Canada has an unusually large population of children, and he has worked courageously and persistently to improve their health. Despite the demands of a busy practice, this has taken him into part-time governmental service, first as a health officer and later as a member of the Provincial Parliament. Now, after nearly ten years of effort, with the backing of the far-sighted Premier of the Province, his dreams for adequate medical facilities for the care of children in Newfoundland are being realized. The hospital of the former Fort Pepperell U.S. Air Force Base, which had been turned back to the Canadian and then to the provincial government in St. John's, is being remodeled into a modern children's hospital. As I left St. John's in a snowstorm to fly home, whom should I meet seeing his parents off on the same plane but another former resident, an American in service caring for military dependents at the U.S. Air Force base in Argentia, Newfoundland. Five months later as I walked into the airport from a plane in Frankfort, Germany, I met another former resident with his wife and baby on a similar mission. Chance meetings in widely separated spots; had I landed in Paris, Rome, Athens, Cairo, Beirut, Ankara, Teheran, Karachi, Bombay, New Delhi, Madras, Colombo, Djakarta, Soerabaja, Hong Kong, Singapore, Manilla, Taipei or Honolulu or a score of other faraway places, I could have picked up the telephone and talked with good friends, whom I had come to know as visitors or as students at the Children's. Thus, the influence of the Children's Hospital Medical Center has spread far and wide around the globe as living testimony that a concern for children is one of the hopeful common bonds which binds humanity together, regardless of race, creed, color, nationality, or political philosophy.

Research Activities

The peculiar nature of a university hospital is that it must organize itself to perform its primary mission as a hospital — the care of patients — in such a way that it can simultaneously carry out its university obligations of teaching and adding to knowledge. Fortunately, each of these latter functions can and should improve the quality of patient care, and all three activities are inextricably intertwined since they are usually carried on by the same people — the full-time staff. As far as research goes, in a clinical department we have a double obligation — to apply advances in the basic medical sciences to investigation of the nature and treatment of disease, and to use the remarkable and often unique opportunities presented by the manifestations of disease to add to basic biological knowledge.

Until recently it was possible for a physician to spend one or two years after completion of his clinical training in a laboratory learning the techniques of one of the medical sciences, and ultimately to return to a clinical department to apply these techniques to study disease as a clinical investigator. This still is the general plan for training someone who is interested in undertaking the very demanding task of combining the care and treatment of sick patients with the scientific investigation of their disease processes. But it is no longer enough. There has been a veritable explosion in the biological sciences, as new chemical and physical techniques have been applied to the analysis of psysiological and pathological processes in molecular terms. As this has occurred, the old barriers between many of the medical scientific disciplines have broken down. What this means for clinical research is that we must organize in such a way that, first, there can be a free flow of knowledge and ideas between the physician working at the bedside or in the clinic and the scientists in basic laboratories — often in institutions such as Harvard College, Wellesley College, or Massachusetts Institute of Technology, as well as at Harvard Medical School; and second, the sophisticated and refined tech-

niques and instruments of the biological sciences can be available in the hospital for the study of disease in the patient. In order to accomplish this today, it is usually necessary to create teams of well-trained clinical investigators and able medical scientists to attack major disease problems by combined efforts, and often to pool the resources of several such teams in sharing expensive and delicate instruments. As examples of this trend, six full-time research workers in the basic medical and behavioral sciences, all but one of them holders of the Ph.D. rather than the M.D. degree, have joined research teams in the department during the last few years. They play a vital role in the training of future clinical investigators and in collaborative research upon disease problems ,while they pursue their own independent scientific investigations. The creation of secure and dignified positions for those pursuing such careers of medical research in a hospital setting is essential for the future.

Research being carried on by members of the department ranges from fundamental studies, such as an analysis of the amino acid sequences in the polypeptide chains of certain abnormal hemoglobin molecules, or a study of the location of genes upon specific chromosomes of human cells, to controlled studies of the effectiveness of a program of family focussed health care in lowering morbidity and improving health in urban families. These examples highlight two major trends in the research program of the department; the first the rapid development of a strong laboratory of clinical genetics under Dr. Park Gerald, which was created by the energy and enthusiasm of Dr. Diamond, and the second the development of studies, with the techniques of the social sciences, upon the problems of medical care under the leadership of Dr. Haggerty.

Idealism in Action

A few words should be said about another heartening trend of the times — the desire of young people to put their ideals into practice. Some of our recent house officers and fellows have translated their concern for the welfare of children into concrete action. Dr. Frank Magill, a recent fellow on leave from his work as a medical missionary, has returned with his wife and children for another five year term at McCord Hospital for Zulus in Durban, South Africa. Dr. Domeena Joseph, a former resident, has been serving as a mission doctor in the interior of her native South Africa. Dr. James Hughes, Chief Resident 1963-64, is at the Institute of Child Health, Calcutta, serving with the Johns Hopkins Medical Research Unit there. Dr. Stephen Joseph, Intern 1963-64, is the doctor for the Peace Corps Volunteers in Nepal, many of whom he can only visit on foot over precipitous mountain trails.

One of our recent fellows and residents, Dr. Dinah Kohner of Belfast, Northern Ireland, has given her life in the fulfillment of her desire to help create a better world for children. A young woman who won the affection and admiration of all who knew her, her example will shine on the records of this Hospital for many years to come. A brief epitaph follows:

Dr. Dinah Kohner

Born: Brux, Czechoslovakia—March 23, 1936.

M.B., B.S. 1959 — Queen's University, Belfast, Northern Ireland.

International Rotary Club fellowship as Representative of Ireland to the United States of America 1961-62.

Fellow in Medicine, Children's Hospital Medical Center, Boston 1961-62.

Assistant Resident in Medicine, Children's Hospital Medical Center 1962-63.

Pediatrician on the S.S. Hope on its assignment to Ecuador where she soon became known as "La Reina del Hope".

Died in Kingston, Jamaica, on September 14, 1964, of injuries sustained in a plane crash in the interior of Ecuador in the course of a campaign she originated against malnutritian in children.

Dinah used all her gifts — a keen mind, a warm heart, and great personal charm — to the full. All who knew her were better for it.

She died, as she lived, gay and gallant in the service of the world's children.

These are young physicians who have responded to the challenge of the hunger, poverty, and disease which beset so many children in an environment different from theirs. What about those who have come filled with eager anticipation from the developing countries to our institution for training, have often suffered cultural shock upon their arrival in such a new environment, but have eventually recovered, and have returned to their own environment, full of idealism and anxious to apply their knowledge in the

service of their own people? We have had many poignant letters reflecting the bitter realities which they encounter upon their return. It seldom has been better expressed than in the following excerpt from a letter from a former fellow: "It is most distressing to return to dirt, disease and poverty . . . Academic atmosphere is conspicuous by its absence, teaching poor, and the medical world is riddled with politics. The gap between the teacher and taught is appalling. I find it easier to talk to you thousands of miles away than to my own professor. The older generation are busy holding private practice and competing for places of honor. The younger generation are overwhelmed by the enormity of the problems and have given up the struggle. There is a general atmosphere of despair and failure everywhere." This is cultural shock in reverse, but the writer of that letter has not given up, and is valiantly struggling to transmit to students the spirit of teamwork, scientific honesty and willingness to question even the professor's reasoning, which had been so striking here. Many others are doing the same in other countries. They are the yeast which will ultimately leaven the academic life of their countries, but patterns of culture do not change rapidly, and the life of the idealist and the revolutionary has always been a hard one in every society. Some of them will not see their aspirations and ideals fulfilled in their own lifetime, but others will follow, and change will come rapidly.

REPORTS OF DIVISIONS AND SPECIAL RESEARCH GROUPS

With the growth of scientific knowledge, increasing specialization in medicine is inevitable. The Children's Hospital Medical Center has always led in this trend in pediatrics; it is the depth of its staff, with their extensive clinical experience in the care of children with rare and serious illnesses, that makes it a unique institution. The spearhead of the attack upon the health problems of children is the research program. The opportunity to study disease in a large medical center, set in the heart of one of this country's leading academic and scientific communities, attracts able people to the staff, and the new knowledge and new methods of treatment being generated in the hospital attract patients seeking treatment. We can only summarize briefly the intense clinical and research activity in the various subdivisions of the Department of Medicine.

Allergy Division —

Harry L. Mueller, M.D., Allergist

The Allergy Clinic is the largest of the Special Clinics, with 3,401 visits in 1963 and 3,850 in 1964. In addition, the staff of the Division have made an important contribution to the Medical Out-patient Department by serving in rotation as consultants for the large number of allergic patients referred to the morning medical clinic.

Dr. Mueller deserves great credit for the time and energy which he and his associates devote to the care of patients, to training Fellows in allergy, and to the education of post-graduate students and practicing physicians in this very important branch of pediatric medicine. They have done their work under serious handicaps with very limited space and inadequate financial support, which must be rectified to permit them to carry through their research plans.

Adolescents' Unit —

J. Roswell Gallagher, M.D., Chief

After 12 years, the unit, which opened with an office and a staff of one in 1951, has passed through infancy and childhood, and has now become the Adolescents' Unit, to conform to the nomenclature of the rest of the Center, which includes the Infants' Hospital and the Children's Hospital. There has been a steady growth of service by the unit, with 5,255 visits and 503 new patients in 1963 and 7,395 visits and 652 new patients in 1964.

One of the major functions of this unit is to train physicians in the care of adolescent patients. Trainees have come from internal medicine, pediatrics, general practice and school health services. Registered as post-graduate students at Harvard Medical School, they serve as Fellows in Medicine in the hospital. Their training has been financed by the Grant Foundation, which has supported this unit generously through the years, but now the U.S. Children's Bureau is also supporting this important training activity. Second year residents in medicine at the Children's Hospital Medical Center, and fellows in other ambulatory service programs, as well as medical students in elective time, are given experience in adolescent medicine. A five-day post-graduate course, under the auspices of Harvard's Courses for

Graduates in 1963 and of the American College of Physicians in 1964, has been given very successfully by the staff of the unit. As a result of the impact and training of Dr. Gallagher's unit, clinics for adolescent patients have been opened in Buenos Aires, Stockholm, Prague and Helsinki, as well as in many university medical centers in this country. Through lectures by members of the staff and publications (Dr. Gallagher's book on "Medi-Care of the Adolescent" has just been translated into Japanese), the unit's philosophy and teaching have been promulgated widely. Last fall Dr. Gallagher served for a month as a very effective consultant to a meeting of experts from many countries called by the World Health Organization in Geneva to consider the health problems of adolescents.

This unit looks out into the community in many ways; it is assisting the Boys' Clubs of Boston in their health program, the ABCD project in a study of school dropouts, and the school systems of Wayland and Sherborn with problems of language disability and sensory perception. Research continues on specific clinical problems, particularly on obesity, in cooperation with Dr. Jean Mayer of the Harvard School of Public Health and Dr. Carl Seltzer of the Department of Anthropology, and on specific language disability.

The staff has been strengthened by the addition of Dr. Thomas E. Cone, Jr. as a member of the senior medical staff and Dr. Rose Coser as a consultant in sociology.

Cardiology Division —

Alexander S. Nadas, M.D., Cardiologist

Few divisions of the hospital have grown so rapidly or so impressively as the Cardiology Division under Dr. Nadas' wise and dynamic leadership. The following statistics tell the story in part:

	1962-63	*1963-64*
Visits to Cardiac Clinics	1,999	2,208
Medical Patients on Division 35 (Sharon Ward)	721	804
Cardiac Catheterizations	459	386
Electrocardiographic Exams	3,387	3,576
Training Grants	$57,338	$82,070
Research Grants*	$34,109	$41,860

* *In addition, a special grant of $112,000 from the John A. Hartford Foundation in 1963 permitted the installation of new angiographic x-ray and photographic equipment, which has permitted much better x-ray studies of the circulation and is now in full operation.*

However, the Division is suffering from its success in developing the field of pediatric cardiology. The whole staff is heavily overworked, space limitations for both clinical studies and research are growing more and more intolerable, and waiting lists (the result of insufficient personnel because of inadequate space) are getting longer and longer. It now takes two to four months for an office consultation, eight months for a cardiac catheterization except in dire emergencies, and over a year for any but an emergency surgical operation.

Despite this difficult situation, the Division's training program has recently provided pediatric cardiologists for the Hawaiian Islands, the All-India Institute of Medical Sciences, New Delhi, the University of Virginia, the University of Chicago, the University of Vermont, and Johannesburg, South Africa. Research activities have grown. Dr. R. Grier Monroe, as head of the experimental laboratory of cardiovascular physiology, has carried on an excellent research program of his own on the factors determining the metabolic activity of the heart muscle, while he has trained fellows in cardiovascular research. Dr. Walter Gamble has been doing some very exciting experimental studies on the use of a fiber optic catheter to take pictures of the inside of the heart. Continuing contributions are being made to our knowledge of the diagnosis and treatment of congenital heart disease, particularly in small babies, many of whom are now being operated on by Drs. Goss and Bernhard, using the hyperbaric chamber. Dr. Paul Hugenholtz, who succeeded Dr. Anna Hauck in charge of the Cardiac Catheterization Laboratory, has been pursuing his interests in vector cardiography very vigorously and, with Dr. Gamble, has pioneered in the use of a new fiber optic instrument, developed with the American Optical Company, for the rapid recording of oxygen saturation of the blood during catheterization.

Dr. Anna Hauck, who gave unstintingly of herself in her completely devoted care of the Hospital's cardiac patients, was stricken with a severe illness in May, 1963, and unfortunately had to be given prolonged medical leave of absence. Her contribution to the care of patients and to the development of the Cardiology Division deserves special mention.

The urgent need for space to permit further development of this dynamic division, which is

providing uniquely valuable services to children in New England, and which is making a very important national and international contribution to the training of teachers and investigators in pediatric cardiology, must be given a very high priority in planning for the immediate future as well as for the long-term development of the hospital.

Child Health Division —

Robert J. Haggerty, M.D., Chief till June, 1964; Joel Alpert, M.D., Chief, July 1, 1964

The Child Health Division serves as a focus for education and research in preventive pediatrics and family medical care, thereby providing clinical facilities and staff for the education of physicians in those aspects of pediatric medicine which occupy the major portion of the family pediatric or medical practitioner's time. Under the leadership of Dr. Haggerty, who became its Chief in 1955, a program of family health and medical care for a selected group of medically indigent families was developed for the education of residents and medical students with the assistance of two large grants to the Harvard Medical School from the Commonwealth Fund and a supplementary grant from the Hood foundation. In 1961 a fellowship program for post-residency training in family medical practice was developed, and the Division was financed by a training and research grant from the U.S. Children's Bureau.

In 1961-62 Dr. Haggerty was given a year's faculty fellowship by the Commonwealth Fund for study of social medicine in England and Europe. During this period, and in the year following his return, he formulated a program of research aimed at determining whether the type of continuing family health care by a team consisting of a physician, a public health nurse and a social worker, which had been evolved in the Family Health program, could improve the health of families, particularly if intensive efforts were applied at the times of family crisis when the chance of making a real change seems most apt to be successful. After a long period of careful preparation, a proposal submitted to the Commonwealth Fund through the Harvard Medical School, (since this program is an interdepartmental and interhospital one) was acted on favorably, and the research was begun in July 1963. Dr. John Kosa, a sociologist, joined the team and has provided the knowledge and techniques of social science for this study.

The staff has been greatly strengthened by Dr. Helen H. Glaser, an experienced pediatric teacher of child development, who came from the University of Colorado. In addition to teaching students, she has developed a teaching program for our residents who are providing pediatric service to the Children's Psychiatric Unit at the Massachusetts Mental Health Center. Dr. Haggerty's departure for Rochester was a serious loss, but he is continuing as a regular consultant to the research program in family health, and Dr. Joel Alpert, his associate, has taken over the direction of the Child Health Division in a very able fashion.

Thus far, this unit has been very important for teaching and research upon many aspects of family health — accidents, respiratory illnesses and "failure to thrive." It is not an essential service unit, since the functions it performs are supposedly provided by Well-Child Clinics of the Department of Health, by hospital out-patient departments and by practicing physicians. However, studies of medical care being carried on by the staff, as well as recent community surveys, indicate that there are often deplorable health conditions, surprising unmet health needs, and very disjointed medical care for much of our urban population, particularly in areas of the city not far from the hospital. One purpose of the present research program is to define these problems and needs. In the development of the "New Boston," it is essential that ways be found to assure that health practices and medical care for all the people in the community are brought up to standards comparable to those in Boston's leading hospitals. This will undoubtedly require cooperation between the medical schools, the hospitals, and the agencies of municipal, state, and federal governments.

Maternal and Infant Health Study (MIH) —

James E. Drorbaugh, M.D., Project Director

Also housed in the renovated Faxon Building is the Children's Hospital section of the MIH Study, which, together with the section at the Boston Lying-in Hospital directed by Dr. Steward Clifford, makes up the Harvard unit of the Collaborative Study, sponsored by the National Institute of Neurological Diseases and Blindness, on "Perinatal Factors in the Etiology of Mental Retardation, Cerebral Palsy and Allied Disorders." This enterprise, involving about a dozen institutions in the country, is en-

gaged in closely following 50,000 mothers during pregnancy, and their infants for the first six years of life. It is attempting to determine the extent to which events suspected of being harmful during pregnancy and delivery do in actual fact cause neurological damage in the baby.

The Boston Lying-in section follows the mothers and their infants for the first eight months, then they are transferred to our section for follow-up during the period from one to six years of age. The Harvard unit has contributed the largest number of mothers and babies to the study, and at the peak period, which will last for the next few years, our section will have to carry out approximately 10-12,000 interviews, medical, neurological, psychological, and speech and hearing examinations per year. The Children's Hospital section was originally organized by Dr. Richmond Paine and has subsequently been directed by Dr. Drorbaugh. A very loyal group of personnel have made this program a very effective one, from which interesting statistical correlations are now beginning to be sought. Dr. Drorbaugh and Dr. John Hubbell are doing a parallel study of infants born to diabetic mothers from the Joslin Clinic, since there is considerable evidence that they are at greater risk than infants of normal mothers. Both of these studies are financed by generous grants from the National Institutes of Health.

Neonatal Pediatrics

Studies of the newborn infant in his period of adjustment to extra-uterine life constitute an exceedingly important area of pediatric research, since most of the mortality in infancy occurs in the first week of life. Research in this field is centered at the Boston Lying-in Hospital under Dr. Clement A. Smith, Director of Research on the Newborn, but involves many of our research groups — in cardiology, hematology, clinical genetics, immunology and endocrinology.

Training in the care of the newborn is given both at the Boston Lying-in and Beth Israel Hospitals, providing an experience with all the babies born in an obstetrical service, most of whom are normal, and at the Children's Hospital Newborn Nursery, under Dr. Samuel Katz, where infants born in outlying hospitals are referred for treatment when they are abnormal. Our nursery has recently been moved from its quarters on Division 25 to make way for the Clinical Research Center to the former Metabolic Unit on Division 37, which provides excellent facilities for better care of these infants.

Respiratory Physiology

Dr. Smith's unit at the Lying-in Hospital is concerned with physiological investigations on newborn infants, particularly with the respiratory distress syndrome, the major cause of death in premature infants. Steady advances have been made by Dr. Smith and his associates, particularly Dr. Nicholas Nelson, in correlating the clinical, circulatory, respiratory, and biochemical phenomena which occur in this puzzling disease.

Dr. Charles D. Cook, before he left for Yale in April 1964, had carried out some very nice studies in fetal lambs with Dr. Howard Jacobson of the Department of Obstetrics and Dr. Leonard Strang, a research fellow from England. They produced experimental evidence for the importance of intrauterine asphyxia as a causative factor in inducing respiratory distress and for deficiency of the surface active material, normally present in the lungs of full-term infants, as a cause of failure of the lungs of premature infants to expand properly.

Care of patients with respiratory difficulties in the hospital has been greatly improved by the development of the Respiratory Therapy service of the Department of Anesthesiology. Nevertheless, there are many problems involving the functions of respiration and ventilation in children and particularly in infants which are vitally important to study in order to delineate a rational approach to treatment. Therefore, it is fortunate that an active laboratory for respiratory studies can be continued by Dr. Mary Ellen Beck, with strong support from the Department of Physiology of the Harvard School of Public Health. She will be joined next fall by Dr. Warren Gold, who is particularly interested in studying the circulation in the lungs, after a period of three years of training with Dr. Julius Comroe, who is one of the foremost workers in the field of respiratory and cardiovascular physiology, at the University of California Medical Center in San Francisco. He will form an important link between the respiratory laboratory, the Department of Anesthesiology and the Division of Cardiology.

Hematology Division —

Louis K. Diamond, M.D., Hematologist

Besides serving as Associate Physician-in-Chief and sharing with the Physician-in-Chief the responsibility for supervising the Medical Service, Dr. Diamond has developed an outstanding program of research and training in pediatric hematology. In addition, with Dr. Sherwin Kevy in immediate charge of the Blood Bank, he has provided a model Transfusion Service for the whole hospital, has organized the treatment of erythroblastosis fetalis in the Children's, Boston Lying-in, and Beth Israel Hospitals, and has developed a strong program in genetics, headed by Dr. Park S. Gerald and strongly supported by the affiliated Blood Grouping Laboratory, which provides grouping and typing of blood cells and blood proteins for genetic studies, for the study of Blood transfusion reactions and for experimental and clinical studies in tissue and organ transplantations, which are destined to become increasingly important in the coming years. These multifaceted research and training activities are supported by several research grants and a training grant in pediatric hematology from the National Institutes of Health. Clinical studies in diseases of the blood cells and in disturbance of the blood proteins have been greatly assisted by a generous grant from the John A. Hartford Foundation, Inc., providing for hospitalization of patients for study and treatment. Important contributions to our knowledge have been made by the Hematology Division in the following fields — blood coagulation disorders, nutritional anemias, aplastic anemia, and congenital hemolytic anemias.

The Clinical Genetics Laboratory —

Park S. Gerald, M.D.

This laboratory is a direct outgrowth of Dr. Gerald's biochemical studies of the abnormal hemoglobins, initiated under Dr. Diamond's stimulation. It is trying to meet the increasing demand for consultation services in genetic problems from this Hospital and from outside physicians and institutions. It consists of two main laboratory units — a cytogenetics laboratory for studies of human chromosomes in selected cases, and a biochemical laboratory concerned with Dr. Gerald's studies on hemoglobin structure and with studies of the aminoaciduria. The latter activity ceased on December 31, 1963, when Dr. Mary Efron, who was in charge, left to take a position as Research Associate in the Kennedy Laboratories at the Massachusetts General Hospital, but efforts are being made to find a suitable replacement. Some concept of the rapid growth of the field is shown by the statistics for the two-year period, during which 740 specimens were received for chromosome analysis and 925 for examination of hemoglobin. These techniques were unknown only a few years ago.

Research from this laboratory has made contributions to the knowledge of hemoglobin structure, to the understanding of the thalassemia syndrome, and to the description of two errors in amino acid metabolism — hydroxyprolinemia and familial hyperprolinemia. It has been possible to identify the chromosome bearing the locus for the alpha chain of haptoglobin and to determine in part the organization of the genes controlling certain of the hematologic changes in D_1 trisomy on the D_1 chromosome. Because of its great importance, there is an increasing demand for research training in this field, and trainees and summer students are being taken on to the extent that space permits.

Renal-Metabolic Unit —

Francis X. Fellers, M.D.

This unit is responsible for the care of patients with body fluid disturbances, diseases of the kidneys, certain metabolic errors such as phenylketonuria, and metabolic bone disease. This is done through consultations with the house staff for patients on the wards, through operation of a special in-patient unit for metabolic studies, through special clinics — the Renal Metabolic Clinic and the Clinic for PKU and Inborn Metabolic Errors — a joint conference with the urological surgeons and radiologists on the care of patients with genitourinary disease and through operation of a laboratory for renal function studies for the Division of Clinical Laboratories. The extent of these services during the two-year period July 1, 1962, to June 30, 1964, was as follows:

Admissions to Metabolic Unit for study	328
Renal Metabolic Clinic	
(a) Children (Visits)	803
(b) Adolescents (Visits)	162
Renal Laboratory—Total Tests	5,842

The PKU Clinic was established in 1963 in cooperation with the Crippled Children's Services of the Massachusetts Department of Public Health. All infants born in the Commonwealth

of Massachusetts now have a blood screening test for phenylketonuria before discharge from the hospital. This test by the State Health Department Laboratories detects suspicious infants — about 1 in 10,000 born. Infants with positive tests are referred to this clinic for chemical confirmation of the diagnosis and, if proven to have the disease, immediate initiation of a special low phenylalanine diet, which is supplied through the Crippled Children's Services. Under proper supervision of dietary therapy through the clinics, infants, who formerly would have been severe cases of mental retardation requiring institutional care, are now developing normally. This clinic was started by Dr. Ellen Kang several years ago, cooperation with the state began last year, and it is now being run by Dr. Joseph Kennedy, with assistance from several members of the staff of the Health Department. Plans are being made to extend its service to children with other proven or suspected inborn errors of metabolism.

The Renal Metabolic Unit has been an important training laboratory, particularly for those from the developing countries where kidney disease, body fluid disturbances, and disturbances of bone and mineral metabolism are common. Fellows who have returned to academic positions in Colombia, Chile, and India, as well as Dr. Kennedy and four summer student fellows from the U.S.A., have worked here in the past two years. There is close liaison with the Kidney Disease group under Dr. John Merrill at the Peter Bent Brigham Hospital, as well as with the group in urological surgery in this hospital.

The research program has been concerned with the problems of osteoporosis, the nephrotic syndrome, renal tubular disease, and with the metabolism of magnesium and of Vitamin D.

Endocrinology Unit —
John F. Crigler, Jr., M.D.
Norman Gold, Ph.D.

Since joining our staff in 1955, Dr. Crigler, with Dr. Gold as his associate in the laboratory, has developed an extremely strong unit. Like the Cardiology Division, its success threatens to swamp it because of the extremely heavy demands placed on the group for consultation from this hospital and from outside physicians and institutions, over and above a continuously heavy schedule of teaching and research. Visits to the Endocrine and Diabetic Clinics totalled 1007 in 1963 and 1068 in 1964.

The very important training role of this unit is exemplified by the fact that during the past two years eight fellows have moved on to full-time academic posts, in this country at the following universities — Yale, Alabama, Tufts, and Maryland — and abroad in Santiago, Chile; Johannesburg, South Africa; Ankara, Turkey and Seoul, Korea. Each of these fellows carried out a research study while here, much of which has already been presented at scientific meetings and is being prepared for publication. The range of their interest is shown by the subjects of their investigations: metabolic effects of human growth hormone, management of children following neurological treatment of craniopharyngioma, effect of fluoride on osteogenesis imperfecta, metabolism of steroid hormones in newborn infants, pseudohypoparathyroidism, blood insulin levels in hypoglycemia, hepatic metabolic transformation of thyroxine, and failure to thrive in severe congestive heart failure due to congenital heart disease.

The research activities of the senior investigators deal with two major problems — the metabolic and growth effects of human pituitary hormones and the effects of different physiological states upon the metabolism of steroid hormones and their effects upon growth and maturation. Research grants of slightly over $100,000 per year, plus some additional training and fellowship grants from the Medical Foundation of Boston and the Organization of American States, have supported these activities.

Dr. Crigler was chosen by the Staff Executive Committee as the first director of the General Clinical Research Center for Children, constructed by the remodelling of Division 25 with temporary laboratory facilities in the Good Samaritan Building. This grant from the National Institutes of Health provides for the full cost of hospitalization of 10-12 patients for study by members of the staff from any service whose program of investigation has been approved. It not only is a financial boon to the hospital ($710,000 for the first year), but is of tremendous assistance to the clinical research programs of all services. Dr. Farber's role in developing this Clinical Research Center program for the country, and his guidance to the committee headed by Dr. Crigler which

prepared the application from this institution deserves the gratitude of all who benefit from it. Until June 30, 1964, patients for metabolic study were admitted to the Metabolic Unit of 5-7 beds on Division 37 which had been remodelled for this purpose with financial assistance from the New England Kidney Disease Foundation and Aid to Muscular Dystrophy Research. Study and treatment of patients with certain categories of disease in this unit was subsidized by a grant from the John A. Hartford Foundation, Inc. When the remodelling of Division 25 began, the Metabolic Unit on Division 37 was closed and converted to a new and improved Newborn Nursery. Study patients were admitted during this period to the general medical wards, but this limited the type of clinical studies which could be undertaken.

Immunology Research Laboratory —
Fred S. Rosen, M.D.

From 1949 until his departure to become Professor of Pediatrics at Pittsburgh, Dr. David Gitlin, working closely with Dr. Janeway, carried on a very distinguished program of clinical and experimental investigation on the metabolism of the plasma proteins. With his departure in June 1963, Dr. Fred S. Rosen took over the direction of the laboratory under Dr. Janeway's general supervision, and the program of investigation and research training has been directed more along immunological lines — particularly to the study of the cells and proteins involved in immunological reactions and their involvement in disease processes. Ezio Merler, Ph.D., a chemist, who had formerly associated with Dr. Gitlin, returned from California to conduct his own research on the structure of gamma globulins and to supervise the training of fellows in the techniques of protein chemistry. In July, 1964, the laboratory staff was augmented by Chester A. Alper, M.D., an investigator with closely allied interests who is a member of the Department of Medicine at the Peter Bent Brigham Hospital.

Dr. Rosen and Dr. Janeway supervise the care of patients with immunological deficiency states as well as so-called hypersensitivity and collagen diseases through consultations in the wards and through a weekly special clinic where patients with chronic liver diseases are also treated. Dr. Rosen collaborates with Dr. Paul Griffin of the Department of Orthopedic Surgery in running a very active rheumatoid arthritis clinic.

The laboratory works closely with the Clinical Genetics, Hematology, and Renal Metabolic groups in its research activities. These have been focussed on hereditary angioneurotic edema, immunological deficiency states, particularly thymic alymphoplasia or alymphocytic agammaglobulinemia, the role of complement, and the relation between structure and function of the gamma globulin molecule. The research is supported by a Program Project grant from the National Institutes of Health and a Research Career Development Award to Dr. Rosen.

Rheumatic Fever Research Unit —
House of the Good Samaritan
Benedict F. Massell, M.D., Director
Edward F. Bland, M.D., J. Gabriel Michael, Ph.D., Gabor Czoniczer, M.D., Research Associates

This unit, which is a direct continuation of the unit started originally by T. Duckett Jones, M.D., in the early 1930's, is concerned with a major chronic disease which begins with streptococcal infections of the throat in childhood and often produces heart disease which may not give any symptoms until well into middle age. Although the number of patients hospitalized at any one time with acute rheumatic fever has been considerably reduced by the prevention of recurrent attacks and by more vigorous treatment of the first attack, this disease remains a serious problem in this country and a major disease in many parts of the world, and hence deserves continuing study until its true nature can be elucidated. Thanks in large part to the long-term observations of patients admitted to the Good Samaritan and followed in its clinics for up to 30 years by the research group at the House of the Good Samaritan, the natural history of the disease, its relationship to preceeding streptococcal infection and hence its preventability with prophylactic penicillin have been elucidated and provide an invaluable background against which to judge the effects of various measures designed to alter its course.

Under Dr. Massell's leadership, a research program supported by grants from the National Heart Institute, the Massachusetts Heart Association, the Medical Foundation of Boston and certain pharmaceutical companies, has been directed at: (1) the treatment of attacks of

acute rheumatic fever, in an effort to settle the optimal role of the two major drugs — aspirin and corticosteroids — in minimizing damage to the heart; (2) the natural history of the disease; (3) the epidemiology of streptococcal infections in families, since these initiate the disease and its recurrences; (4) host factors in susceptibility to a disease which seems to have a strong familial tendency; (5) laboratory studies on streptococcal infection, the effect of penicillin, and immunity to streptococcal infection. The latter studies have been greatly strengthened by the addition of J. Gabriel Michael, Ph.D., a microbiologist, who has proved to be a very effective and stimulating colleague, and has recently been voted a Research Career Development Award by the National Institute of Allergy and Infectious Disease.

In addition to the activities recorded in the preceding section, several members of the Department carry on their research activities as members of the Division of Laboratories and Research. Dr. Harry Shwachman, Director of the Division of Clinical Laboratories, has one of the largest and best organized programs in the country for the care of patients with Cystic Fibrosis. Dr. Samuel L. Katz is working actively on problems of Viral Invection and Immunity in the Research Division of Infectious Diseases with Dr. Enders. Dr. Anna Mitus and Dr. William Neikirk provide continual expert and devoted clinical supervision of patients with disseminated tumors in the Tumor Therapy Division. Each of these physicians also plays an important role as a member of the clinical and teaching staff in the Department of Medicine.

Staff Activities and Honors

To keep track of the activities and honors which come to a large and busy staff like ours would require a special secretarial and office staff. Perhaps it is best simply to state that during the past two years members of the staff received several honorary degrees, medals and awards, served as Visiting Professors or Lecturers at various medical schools in the U.S.A., Europe, Latin America, the Middle East, and the Far East, and participated in the activities of local, national, and international agencies and organizations.

Personnel Changes

Three members of the staff have left during the past year to head Departments of Pediatrics in other medical schools. Dr. R. Cannon Eley, who has been closely associated with this hospital ever since he first came as a house officer in 1926, except for a period of service in the Navy during the war, took up his new position as Chief of Pediatrics at the Roger Williams General Hospital, Providence, and first Professor of Pediatrics in the developing School of Medical Sciences at Brown University in May, 1963. Fortunately he retains a close connection with this hospital. In April, 1964, Dr. Charles D. Cook, who first came to the Children's as Chief Resident in Medicine in 1949 and who had been Chief of the Medical Out-patient Department since 1954, went to Yale as Professor and Chairman of the Department of Pediatrics. In July, 1964, Dr. Robert J. Haggerty, who first came from Strong Memorial Hospital, Rochester, New York, as a medical house officer in 1953 and who rose to become Chief Resident and then Chief of the Child Health Division as well as Director of Harvard's Family Health program, returned to the University of Rochester as Professor and Chairman of that Department. I believe this brings the number of pediatric department heads in U.S. medical schools who had an appreciable part of their training here to 17, which is close to one-fifth of all the department heads in the country.

Dr. David Gitlin, who had a distinguished career in investigation and teaching here since he came first as a house officer from New York University in 1949, left in July, 1963, to become Professor of Pediatrics at the University of Pittsburgh. In August, 1963, Dr. Richmond Paine, a former house officer who had become Associate Neurologist and first Director of the Maternal and Health Project, moved to Washington, D.C., to become Professor of Pediatric Neurology at George Washington University and Neurologist to the Washington Children's Hospital. Dr. Jerome Grunt, of the Endocrine Division, has gone to Yale as Associate Professor of Pediatrics. Dr. Donald M. Allen, a former resident, fellow and assistant in hematology, returned from a year of study in Uganda to become Assistant Professor of Pediatrics at Tufts and Hematologist to the Boston Floating Hospital. Dr. Roger Meyer left in September, 1962, from the Child Health Division to become Assistant Professor of Preventive Medicine in the University of Vermont.

On November 21, 1963, death came suddenly

to Robert T. Moulton, M.D., Associate in Medicine since 1949. Born in Peabody, a graduate of Harvard College and Harvard Medical School, Dr. Moulton served as intern in bacteriology and pathology here in 1934-36 and as resident in medicine from 1935 to 1937, when he entered practice in Salem. A fine physician and a leader in his community, he remained a member of the staff of this hospital from 1937 until his death, faithfully participating in the teaching program in our out-patient department. He was instrumental in the development of an affiliation between this hospital and the North Shore Babies' and Children's Hospital in Salem, where he was Chief of Staff, and played an important role in the affiliation of that institution with the Salem Hospital for better service to the children of the North Shore area.

Several important additions to the staff have been made. Dr. Thomas E. Cone, Jr., formerly Chief of Pediatrics at the U.S. Naval Medical Center, Bethesda, with both scholarly and teaching interests, came here as Associate Clinical Professor of Pediatrics at Harvard and as Director of Ambulatory Services. When Dr. Cook left, he became Chief of the Medical Outpatient Department and has assured the maintenance of the high stardards of care which the former had established. From the large Naval Hospital at the other end of the continent, Dr. William I. Neikirk also came to this hospital as Senior Associate in Medicine, bringing his great clinical experience to bear on the medical care of patients with disseminated tumors in the Tumor Therapy Division. Dr. John Kosa, an experienced sociologist, came from the University of North Carolina in 1963 to play a major role in the research program on family medical care, while Dr. Ezio Merler has brought scientific strength from the field of chemistry to our Immunology Research Laboratory. Two years ago, Dr. Oliver F. Roddey, who had made a fine record as a junior and senior assistant resident, moved back from Charlotte, North Carolina, to Boston to join our staff. He has a part-time office in the hospital, where he provides exemplary care for patients who come seeking assistance from the hospital, but who fall in the private patient category. The establishment of an office where private care is immediately available for patients who come to the hospital rather than to an individual has been a great improvement.

During every year, a stream of visiting doctors passes through the hospital, most of them for short periods of time. Last year Professor Jerome Lejeune of Paris, Dr. Werner Jacobsen of the University of Cambridge, Professor Kerpel-Fronius from Pecs, Hungary, a former research fellow, Professor Mohsen Ziai, a former chief resident, now Professor of Pediatrics at the Pahlavi University, Shiraz, Iran, Professor J. Stroder of Wurzburg, Germany, and Professor G. Fanconi, Secretary-General of the International Pediatric Association, were among those who honored us with a visit. This year, in addition to many short-term visitors, we have had Dr. John Beveridge, Professor of Child Health at the University of New South Wales, Sydney, Australia, for a considerable visit and Dr. William B. MacDonald, Professor of Child Health, University of Western Australia at Perth, here for a full year as a visiting professor; he has contributed greatly to our teaching, research and clinical programs.

PLANS FOR THE FUTURE

Services to Patients

The basis of all our work as a hospital is to give the best medical care possible to patients who seek our help. This is fundamental to all our activities: *Teaching* is best by example, and we must practice rather than preach good care, so it permeates the atmosphere of the institution and affects all who work in it; *research* is aimed at improving care by deepening our knowledge of disease, since it is only through advancing knowledge that we gain the power to improve treatment or to prevent disease and disability. I have no use for those who say that a university hospital exists primarily for teaching and research, and that the care of patients is secondary. It is this philosophy which, I believe, accounts for some of the present difficulties of modern medicine in the United States. The philosophy that good patient care is the primary reason for the existence of the hospital, but that teaching and research are essential if we are to give the best care, has always been the tradition of this institution. In looking at the problems and needs of the Department of Medicine in the light of this philosophy, certain general plans seem obvious.

1. *Medical Emergency Clinic.* This heavily overburdened facility demands careful study to determine what lies behind its spectacular

growth, and how best to organize our emergency and other ambulatory facilities to meet the needs which have produced this growth.

2. *Medical Out-patient Services.* The growth of special clinics, the increasing age of many of the patients with chronic diseases requiring the blending of knowledge of the specialist in the disease with knowledge of the specialist in the management of the patient to produce the best total care, and the blurring of lines between private and medically indigent patients all suggest the need for great enlargement and improvement of our ambulatory clinic facilities. Plans for the new Ambulatory Clinic building will do much to meet the physical requirements of the new patterns of ambulatory care which are inevitably developing under the pressure of scientific advances and socio-economic changes. The Neurology Clinic is a striking example of our current difficulties. At present it is a stepchild in the Medical Out-patient Department, operated as it was when neurology was part of general pediatrics. Now with a separate Department of Neurology, in which pediatricians are receiving splendid neurological training, it urgently needs a home of its own where its Chief can organize his program of ambulatory care, training and research as he feels it should be. From the standpoint of optimal patient service, we believe that the proposed building should include quarters for the Adolescents' Unit, in order to bring all the Ambulatory Services of the Hospital, except those for emergencies, into one structure where the best coordination between professional and supporting services (x-ray, laboratory, social service, etc.) can be achieved.

3. *Ward Services.* In the eight years since the Farley Building was opened, changes have continued to occur in medical care and in the evolution of the institution toward a complete medical center for infants, children and adolescents. Consequently, a number of internal rearrangements of that building have been forced on us by the necessity for improving and reorganizing our services to meet these changes. As we plan for the future, it is essential to look ahead at the developments that are most likely to occur. The general plan of setting up nursing units to meet the needs of certain age groups — infants, older children, adolescents — on the one hand, and of certain groups of patients of all ages requiring specialized equipment and nursing — cardiac, metabolic, neurosurgical, or orthopedic patients for example — has many advantages from the standpoint of efficient nursing and high quality of care. On the other hand, it may introduce rigidity into an institution which must adapt to varying patient loads in various special areas at different times, and increases our difficulty in arranging continuity in our training program for interns and residents. We intend to set up a joint medical-nursing committee to study the organization of our medical in-patient services to determine, if possible, how we should plan for the future to meet the needs for patient care and to promote medical and nursing education, while permitting the administration the greatest flexibility in maintaining maximal occupancy.

At the present time, there are several serious shortcomings in the bed facilities for medical patients. First, with the growth of the courtesy staff, a block of beds in one place for the patients of these physicians is urgently needed so that communication between the responsible physician and the house officer caring for his patient can be facilitated. These beds are bound to be subject to wide seasonal swings in occupancy and must be planned with a view to other uses at slack times. Second, convalescent facilities in the Good Samaritan Building are too isolated for efficient administrative, nursing, or professional supervision. There is real need for a place close to the main ward areas where semi-ambulatory patients and those with chronic illnesses can be cared for less expensively and in a different atmosphere from the main hospital, but readily accessible to all its professional and supporting services. Third, an area is needed where children and particularly adolescents with serious disturbances of behavior can be placed, at least until enough is learned about their problems to permit an intelligent disposition for long-term psychiatric treatment. For these reasons, the construction of the proposed Clinical and Research Building between the Farley Building, Blackfan Street, and Building A is urgently needed to provide additional well-planned, but flexible, space for in-patients, space for the clinical investigative activities of the staff, and such essential supporting services as X-ray, clinical laboratories, record room, statistical services, photography and other visual education facilities, and library.

Two in-patient facilities should be closely integrated with development planning — first, an area for the coordinated care of all sick newborn infants, either those born in the Boston Lying-in Hospital or those referred to our present Newborn Nursery from outlying hospitals; and second, an area for the care of adolescents, staffed from both the Children's Hospital Medical Center and the Peter Bent Brigham Hospital. There is a great deal of both formal and informal professional collaboration between the staffs of the two institutions already. This would increase it further, to the benefit of patients in this age group who are now cared for in both hospitals.

Research

Categories are dangerous, but research in an institution such as this hospital tends to divide itself into three general types based upon where it is carried on, although there is much overlapping — (1) *experimental laboratory investigation* into the nature and mechanisms of disease (sometimes called basic research); (2) *clinical investigation* upon the problems of disease in individual patients or groups of patients; and (3) *field studies* of medical care.

Research is a function of every department of a hospital such as ours, and yet research is frequently most fruitful when it involves collaboration between individuals in different departments and between basic medical and social scientists and clinical investigators, working as partners in a collaborative enterprise. This obviously presents organizational problems for those who like to see everything neatly pigeonholed in an organizational chart, such as adorn most government offices and tend to create a type of rigidity and resistance to change which is the very antithesis of the imagination and flexibility needed in research. Basically, research is a matter of individuals, from whom the ideas come, and an organizational structure which permits them the greatest freedom to function effectively. Planning ahead for the research activities of the department in these three categories has been very much in the minds of all the senior members of the department and is a frequent topic for discussion. Any implementation of new plans has been stopped by lack of research space and lack of unrestricted funds for the support of key individuals. Both of these bottlenecks are now giving way — the first as the construction program moves forward, the second with the availability of new financial resources, although it will be five years before the present bottlenecks can be cleared.

1. *Experimental laboratory investigations.* Studies of the basic mechanisms of disease, using experimental animals or sophisticated laboratory techniques in the study of material from patients, are carried on by many members of our department who are also engaged in clinical investigation. The plan now being worked on, to construct a research building which will combine laboratory investigations in the neurosciences and genetics for study of mental retardation with laboratories for application of the techniques of chemistry, pharmacology, physiology, experimental pathology, immunology and microbiology to the study of other diseases, should create excellent physical facilities. These would be used to house a group of distinguished basic medical scientists and many members of the professional staff both in research and research training, who are engaged in studies on the broad problems of human growth and development. The James L. Gamble Professorship in Pediatrics at the Harvard Medical School, just established through the generosity of the family and friends of Dr. Gamble, provides the resources for a tenure post for an outstanding investigator for whom this building will be essential. Otherwise, like the Bronson Crothers Professor of Neurology, he and his group will have no place in which to work. Underwriting of several such tenure positions in the basic medical sciences, as has been indicated by the Trustees, will greatly strengthen the research efforts of those in the clinical departments of the hospital and will tighten our essential intellectual bonds with the Harvard Medical School.

2. *Clinical Research.* The study of disease in patients is essential to an understanding of human disease, its treatment and prevention, and is an extremely exacting field since it necessitates the combination of the skills of the physician, who keeps the welfare of his patient uppermost in his mind, with the probing curiosity and disciplined mind of the scientist. When there is a conflict between these, it must obviously always be resolved in favor of the patient. Clinical investigation requires in-patient facilities for carefully planned and executed diagnostic or therapeutic studies, and support-

ing laboratories. It also requires clinic facilities, offices for staff and laboratories for specialized studies in patients, e.g. for cardiac catheterization, assessment of renal or pulmonary function, etc., which must by their very nature be close to the in-patient services of the hospital. It requires ready access to the X-ray Department, to photography and to a center for the preparation of slides and charts; and within reasonable distance to the library, to the department of pathology and to experimental laboratories, where problems raised by patients may be subjected to more rigorous analysis. All of these will ultimately be available, but it should be stressed that the research needs of the clinical departments will only be partially satisfied by the construction of the Clinical Research Center, the proposed Ambulatory Clinic Building and the presently proposed Research Building. The construction of the Clinical and Research Building in front of the Farley Building along Blackfan Street has a very high priority for the clinical departments.

Several strong clinical investigative units, which have developed in the department, will urgently need space in this latter building. These include: (a) *Cardiology Division*, which carries an enormous load of service to patients, and which desperately needs a center for Cardiology and Cardiovascular Research to permit it to meet demands from patients and the opportunities for research; (b) the *Hematology Division*, and the *Clinical Genetics Unit*, which have a unique opportunity not only to serve effectively the Hospital, but the whole Harvard Medical Area in teaching, research and assistance to patients; (c) the units concerned with *Endocrinology, Metabolism, and Renal Disease*, which have large responsibilities both for patient care and for research, and which involve frequent collaboration with other departments and other hospitals.

In these fields of intense activity both in the care of patients and in research, some type of continuing financial support is essential, both for those who are engaged primarily in the treatment and study of patients and for their research associates from the basic sciences in their laboratories. Although the General Research Support Grant, Research and Training Grants, and Research Career Development Awards have been very helpful in stabilizing the positions of the latter, greater long-term security is needed for them. Even more, financial backing which will permit academic promotion is needed for those clinical investigators and physicians upon whom falls so much of the burden of carrying out this hospital's unique role in caring for children with chronic diseases. Income from the care of certain types of patients with third-party insurance is available and has been tapped for this purpose. I believe this will be an increasingly important source of income for the payment of full-time salaries in the future, but at present most of it is needed to assist the Hospital in paying more adequate stipends to the house officers who give most of the medical care. Although salaries can be constructed from temporary funds, it will be very important for the Hospital to underwrite a certain number of salaries for full-time members of the clinical staff whose academic records would fully justify their promotion to tenure rank were such permanent funds available.

3. *Field Studies on Medical Care.* By a series of natural steps, medical education has retreated into the university medical center, where scientific medicine and research flourish, and where the care of patients with serious illness is carried on at an extremely high level. The consequence has been that the student, who often enters medical school with an image of himself created by the family physician who cared for him as a child, is exposed almost entirely to specialists, whose high esteem in the profession and academic advancement are based upon their research. Small wonder that the number in the class who plan to enter family practice dwindles to a mere handful during the four years of medical education. Following medical school, the best internships and residencies are also in university teaching hospitals, which set this pattern for other institutions. These great medical centers play a tremendously valuable role in caring for serious disease, in training specialists, and in research. However, investigation has shown that their referred patients represent a very small fraction of the total burden of illness and anxiety in the community, although they account for most of the mortality from disease. As I have indicated, the rapidly rising numbers of people who flock to the emergency clinics of great metropolitan hospitals probably do reflect the true picture of ill health (morbidity) in the cities, but the vast numbers who come and must be

seen quickly are not entirely conducive to training the young physician in the provision of primary medical care as a practicing physician.

Some of us feel strongly that it is the responsibility of academic medicine — the medical schools and teaching hospitals — not only to maintain present standards in the care of seriously sick hospitalized patients and in the study of catastrophic illness, but also to look more into the medical problems of people in their communities. We must apply the same high standards to patient care in home or office, and the same rigorous intellectual discipline to the study of the pressing problems of how to deliver the best in health service to all our people and how to diminish the burden of illness and anxiety which accounts for so much of human suffering and ineffectiveness. This point of view led first to the establishment of the Family Health Care Program based on the Child Health Division, and now has led this program into a major research effort. This has as its aim the qualitative and quantitative comparison, in terms of measurable indices of health, between families receiving what we presently believe is the best type of care we can give (family-focussed continuing preventive and curative medical care by a single health team of a doctor, public health nurse and social worker) and the present hit-or-miss use of multiple hospital and community health resources for the care of individual episodes of illness, which is the pattern for most urban families. This type of research is extremely difficult, but with the help of social scientists we hope to learn much about the nature and frequency of the health problems which trouble urban families, and to determine whether it is possible to minimize the effects of ignorance, emotional stress, poor housing, and poverty which combine to increase the amount and severity of illness which they experience.

Thus, a medical department needs not only experimental laboratories and facilities for clinical investigation in the hospital, but a "field laboratory" which permits it to study the epidemiological problems of illness in the home and the problems of primary medical care. It is our feeling that family medicine is a specialty, requiring special qualifications and training, based on a growing body of specialized scientific knowledge drawn from both the biological and social ledge drawn from both the biological and social sciences. If this is so, and medical schools come to recognize it by creating departments of family medical practice, we believe that the problem of getting good doctors to care for our population more effectively in their own communities may some day be solved. Obviously the total problem of delivering optimal medical care is a huge one, but, as the intellectual leaders and pioneers in medicine, university medical centers must delineate the problems and experiment with ways to meet them, which can then be applied on a more general scale. Clearly, the development of such a field laboratory, on a sufficient scale to permit the teaching of medical students and a good research program as well as the provision of comprehensive medical services to families and to persons of all ages, must be an interdepartmental, interhospital undertaking. It is our hope that the proposed "hospital complex" may some day serve as the base from which high quality comprehensive medical services may be delivered to those living in the area surrounding the Harvard Medical School, both as a demonstration of good medical practice, and as a laboratory in which clinical, epidemiological, social and economic studies of medical care may be carried on by many departments of the university.

In closing this report, I should like to express my own personal thanks to all the members of the professional staff — senior staff, house officers and fellows — who make up the Department of Medicine and whose loyalty and ability make the task of being their Chief an easy one; to our colleagues in other departments who cooperate so closely in the care of many of our patients; to the nursing service, who, perhaps more than any other group, give the hospital its reputation for good care; to the other supporting services, such as social service, recreational service, laboratory services, without whom we could not function; and especially to the great number of people in the manifold administrative, maintenance and housekeeping departments who keep the hospital running smoothly, our sincere thanks. The friendly and kindly atmosphere of this institution which makes it a privilege to work here is the product of the combined actions of all these people.

Charles A. Janeway, M.D.
Physician-in-Chief

In-patient Services

	1946-47	*1956-57*	*1961-62*	*1962-63*	*1963-64*[3]
Short-term Divisions					
Admissions	2,261	2,917	3,688	4,249	3,751
Hospital Days	33,926	26,484	31,232	33,334	32,207
Av. Stay (days)	15	8.4	8.5	7.9	8.6
Long-term Divisions					
Admissions	464[2]	253[2]	139	120	137
Hospital Days	32,692[2]	20,757[2]	8,930	5,963	5,722
Av. Stay (days)	70	82	64	50	42
TOTAL ADMISSIONS	2,725	3,007	3,827	4,369	3,888
TOTAL HOSPITAL DAYS	66,618	47,241	40,169	39,297	37,929

[2] *Including all convalescent patients; later figures only medical convalescents.*

[3] *Lower figures reflect separation of Department of Neurology and reduction of beds.*

Mortality

	1962-63	*1963-64*
Number of Admissions	4,369	3,888
Number of Deaths	226	249
Mortality	5.9%	6.4%
Postmortem Examinations	85%	87%
Causes of Death		
Neoplastic Diseases	34%	33%
Congenital Heart Disease	16%	21%
Diseases of Premature and Newborn	12%	13%
Cystic Fibrosis	9%	10%
Infections	8%	4%
Congenital Malformations and Inborn Metabolic Errors	4%	3.5%
Diseases of Blood	2.5%	2.5%
Diseases of Kidneys	2%	1.75%
Unknown (Mainly sudden death)	2%	3.5%
Miscellaneous	10.5%	6.75%

Ambulatory Services

(Visits)	*1946-47*	*1956-57*	*1961-62*	*1962-63*	*1963-64*
Child Health Unit	—	2,839	3,158	3,372	3,053
Medical Emergency Clinic	—	5,506	17,324[1]	21,658[1]	27,640[1]
General Medical OPD	13,470	7,701	17,799	7,544	7,420
Special Medical Clinics	10,890	10,057		10,961	11,868
Adolescents' Unit		4,807	5,331	5,255	7,395
TOTAL VISITS	24,360	30,939	43,612	48,790	57,376

[1] *These figures do not include medical patients seen between 11 p.m. and 7 a.m., who make up the majority of some 2,700 patients seen in the Surgical Emergency Clinic area during these hours.*

Medicine
1962-63 House Staff

Chief Residents
Thomas W. Adams
David H. Smith

Residents
George E. Cassady
George P. Contis
Allan Goldblatt
Montgomery C. Hart
John A. Dodge
Richard A. Katz
John L. Wilkins

Assistant Residents
Horace P. Baker
Richard A. Doherty
Gerald W. Fernald
John H. Gould
James R. Hughes
Robert J. Warren
Dorothy Wilson
Domeena Joseph
Dinah Kohner

Junior Assistant Residents
Walter R. Anyan, Jr.
Ralph B. Dell
Warren W. Quillian
George L. Robb
Frank K. Thorp
Jordan R. Wilbur

Interns
Cheston Berlin
Robert A. deLemos
Paul H. Jewett
Clinton Lillibridge
George A. Nankervis

1963-64 House Staff

Chief Residents
John L. Green
James R. Hughes

Residents
Donald Barltrop
M. David Atkin
Gerald E. Gaull
Guido Herz
Richard A. Katz
Robert J. Warren

Assistant Residents
Theodore AvRuskin
Edward S. Emery, III
Richard B. Johnston, Jr.
Tillinghast G. Lybass
June E. Osborn
Louis P. Rodrigues
David Rush
Liza Yessayan

Junior Assistant Residents
Charles S. August
Robert A. deLemos
Richard J. Grand
Paul H. Jewett
Clinton Lillibridge
Edward B. Marsh, Jr.
George A. Nankervis
David Zlotnick
Saul Wider

Interns
W. French Anderson
Thomas P. Graham
Gary J. Myers
Stephen C. Joseph
Howard E. Kulin

Residents for Ambulatory Service
1962-63
L. L. Brown, M.D.
Vincent A. D'Alessandro, M.D.
Nancy W. Hendrie, M.D.
Dinah Kohner, M.B., B.S.
R. Lancaster, M.D.
A. N. Marks, M.D.
William McDermott, M.D.
Bianca M. D. Orzalesi, M.D.
Nghiem X. Quang, M.D.
Lesley Joan Rainier-Pope, M.D.
I. V. Santiago, M.D.
Thomas H. Rockel, M.D.
Edward Paul Sirois, M.D.
Marianne W. von Hippel, M.D.
Raymond C. Yerkes, M.D.

1963-64
R. F. Biehl, M.D.
B. G. Cilento, M.D.
E. M. Galan, M.D.
J. L. Murray, M.D.
M. Orzalesi, M.D.
M. T. Piccinini, M.D.
A. W. Pittelli, M.D.
P. Russo, M.D.
M. L. K. Sheil, M.D.
L. A. Speno, M.D.

Medicine
Affiliated Residents and Residents for Ambulatory Services
At Beth Israel and CHMC
Domeena C. Joseph, M.B., B.S.
Jasbir Kaur, M.B., B.S.
Bella R. Rodriguez, M.D.
S. M. Pueschel, M.D.
Diana Tuan-Yi Su, M.D.
William G. Shakespeare, M.B., B.Chir.

At Beverly and CHMC
Liza Yessayan, M.D.
Edith M. J. K-Y Shen, M.D.
Guido Herz, M.D.
L. A. Barandiaran, M.D.

At Mount Auburn and CHMC
Gary Prowe, M.D.
Ghamar Hashemee, M.D.
Bachoo Cavashaw Edibam, M.D., B.S.
Junk Ok Lee, M.D.
W. G. Eliopoulos, M.D.
Saovakon Sakarin, M.D.

At North Shore Babies' And Children's Hospital Salem, And CHMC
Ho-Man Kwok, M.D.
Saovakon Sakarin, M.D.
Margaret Ruth Pickering, M.D.
Richard J. Pickering, M.D.
Jean Duquella, M.D.

Medicine
Fellows and Research Fellows

Adolescent Division

B. D. Buttrick, M.D.
Mithat Coruh, M.D.
H. C. Faigel, M.D.
D. N. Franklin, M.D.
D. C. Garell, M.D.
A. L. O'Hanley, M.D.
P. H. Patterson, M.D.
C. A. Rigg, M.D.
M. E. Robertson, M.D.
G. P. Rizzone, M.D.

Allergy Division

G. P. Baker, M.D.

Cardiology Division

S. R. Aguilar, M.D.
M. A. Carpenter, M.D.
G. P. Contis, M.D.
A. Gallez, M.D.
W. J. Gamble, M.D.
R. Gamboa, M.D.
W. M. Gersoney, M.D.
A. Goldblatt, M.D.
S. Gross, M.D.
C. G. C. LaFarge, M.D.
A. M. Levy, M.D.
M. R. Mody, M.D.
F. F. Nakamura, M.D.
C. R. Rainier-Pope, M.B., Ch.B.
J. E. M. R. Souza, M.D.
R. Tandon, M.D.
O. G. Thilenius, M.D.

Rheumatic Fever Division (HGS)

F. Amezcua, M.D.
J. T. Amezcua, M.D.
U. Barkoukis, M.D.
J. E. Dugge, M.D.
T. Michael, A.B., M.S.
S. Pelargonio, M.D.
E. Pitt, M.D.
H. Posada, M.D.

Child Health Division

J. J. Alpert, M.D.
D. Balrtrop, M.B., B.S.
L. P. Carmichael, M.D.
E. Charney, M.D.
H. E. Rose, M.D.
J. A. Willoughby, M.D.

Endocrinology Division

A. Benderly, M.D.
N. Bilginturan, M.D.
J. D. Cartright, M.B., Ch.B.
R. D. Cunningham, M.D.
M. Grossman, M.D.
J. A. Grunt, M.D.
M. A. E. Herrera, M.D.
P. R. O. Melice, M.D.
D. Slone, M.D.
Se Mo.Suh, M.D.

Hematology Division

G. E. Bloom, M.D.
D. W. O'G. Hughes, M.D.
M. R. Klemperer, M.D.
A. Kliman, M.D.
L. Naiman, M.D.
F. A. Oski, M.D.
S. Ozsoylu, M.D.
M. Santorineau, M.D.
J. D. Singer, M.D.
N. T. Shahidi, M.D.
H. S. Strauss, M.D.
S. L. Tosi, M.D.
I. Umansky, M.D.
A. Weil, M.D.
J. Yasuda, M.D.

Infectious Diseases

D. H. Carver, M.D.
A. Gunalp, M.D.
D. J. Lan, M.D.
M. J. Leas, M.D.
K. Naficy, M.D.

Neurology Division

A. Abadi, M.D.
D. E. Donovan, M.D.
R. P. Hardman, M.D.
P. Lerman, M.D.
E. S. S. S. Kang, M.D.
B. H. Ong, M.D.
A. L. Rose, M.B., Ch.B.

Seizure Division

G. Erba, M.D.
A. Golczyk, M.D.
K. Kun, M.D.

Newborn Disease Division

R. W. Boston, M.D.
G. E. Cassidy, II, M.D.
Florence Geller, M.D.
M. C. Hart, M.D.
H. Levison, M.D.
D. M. Muirhead, M.D.
L. S. Prod'hom, M.D.
Catherine Wang, M. D.

Nutrition Division

E. M. Copperman, M.D.
S. El S. Kassim, M.D.
D. Katznelson, M.D.
K. T. Khaw, M.D.
A. V. C. Lloyd, M.B., B.S.
A. Roura, M.D.
R. R. W. Townley, M.D.
D. H. Wiseman, M.D.

Metabolism Division

C. Herrera, M.D.
J. L. Kennedy, Jr., M.D.
E. M. Mehta, M.B., B.S.
A. Pradilla, M.D.

Respiratory Physiology Division

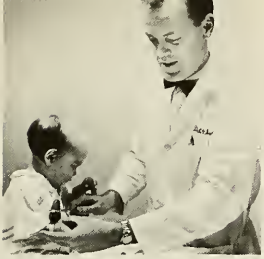
Etsuro Motoyama, M.D.
Marcello Orzalesi, M.D.
E. O. R. Reynolds, M.B., B.S.
L. B. Strang, M.B., B.S.

Tumor Therapy Division

Jorge Alvarado, M.D.
Lakshmi Das, M.D.
B. G. Delta, M.D.
C. F. Geiser, M.D.
C. T. Griffiths, M.D.
L. Loridan, M.D.
M. A. Mathews, M.D.
B. Orzalesi, M.D.
V. A. Ngu, M.D.
M. Santorineou, M.D.
G. Yessayan, M.D.

Others

C. A. Alford, M.D.
I. F. Abroms, M.D.
Mary Ellen Beck, M.D.
C. Beltran-Paz, M.D.
N. A. Cheney, M.D.
P. Fireman, M.D.
S. P. Gotoff, M.D.
E. J. Hershgold, M.D.
H. S. King, M.D.
J. MacLeod, M.D.
S. L. Reynolds, M.D.
G. P. Rao, M.D.
J. L. Wilkins, M.B., B.S.
J. A. Dodge, M.B., B.Ch.



The two year period covered by this annual report has seen a number of changes in the Department of Neurology. The period began with the untimely death of the first incumbent of the Crothers Professorship, Dr. L. Lahut Uzman, whose important contributions to the understanding of the biochemical aspects of neurologic disease will have an enduring effect on the field of neurology. Dr. Randolph K. Byers served as Acting Neurologist-in-Chief until my arrival in July 1963, when he "retired" to continue with his full time service to CHMC and the Department of Neurology.

Research

The laboratory research program of the department is now actively underway in three rooms in the Jimmy Fund Building, which have been generously placed at our disposal by Dr. Farber. In addition to myself, two full time research fellows, Dr. Robert W. P. Cutler and Antonio V. Lorenzo, and two technicians are engaged in studies of brain permeability, using radioisotope methodology. Our studies can be divided into three major areas of interest. In the first place we are studying the uptake of radioactive sulfate in multiple regions of cat brain in response to convulsive seizures induced by a number of chemical agents. Thus far, each of two different convulsant drugs have produced quite different patterns of abnormal permeability and preliminary experiments have also shown a somewhat different pattern in the immature cat. These studies reveal some of the fundamental transient regional permeability changes that occur in brain in association with convulsions, and may also indicate the major sites of action of these convulsant drugs.

A second area of investigation is a study of the entry of protein and circulating white blood cells into brain in a variety of allergic encephalitis which can be produced in laboratory animals by inducing allergy to brain tissue. This experimental disease is very similar to the brain damaging complications that occasionally develop during childhood infectious disease such as measles, and the pathology is also somewhat reminiscent of multiple sclerosis. By using a recently developed radioisotope of iodine (I^{125}) attached to protein, we are able to detect the location of the protein at a cellular level by autoradiography, as well as assay the quantitative changes by radioassay. We have also learned that circulating white cells quickly pick up heat coagulated labelled protein, thereby labelling themselves. All of this happens in a few minutes and it is possible for us to trace the isotope labelled cells into brain, and follow their progress. Because of the rapidity of the process of cell labelling, the timing of the migration within brain can be very precise. Because tissue is sensitized either by protein or by cells, these studies are fundamental to the understanding of a number of central nervous system disorders that may have an allergic basis.

The final area of interest is the investigation of the binding of the anticonvulsant drug Dilantin to brain tissue and to proteins in general. These studies may reveal more of the properties of this most useful drug.

Seizure Unit

The Division of Clinical Neurophysiology and Seizure Unit, under the direction of Dr. Cesare Lombroso, has undertaken a number of studies, many of which will continue as long term projects. The diagnostic and prognostic value of the EEG in the newborn infant has been investigated, particularly in relation to the changes occurring in metabolic encephalopathies such as tetany, hypoglycemia and pyridoxine dependency. The Seizure Unit group has also studied the localizing and prognostic value of the "pentothal EEG artifact" in temporal lobe epilepsy, acute vascular accidents, and certain other disorders. A number of long-term clinical studies are also in progress, including collaborative studies with the neurosurgical service on hemispherectomy; a study of the clinical, viral, electrographic and immunological characteristics of 9 cases of subacute inclusion-body encephalitis (in collaboration with a number of people at CHMC) ; and studies on the natural history and mechanism of breath-holding attacks. At the present time, this division is exploring the use of averaging computer techniques in the investigation of the electro-physiology of the human newborn and infant (a 400 B Computer of Average Transients has been purchased), and, in collaboration with the neurosurgical service, a study is in progress to evaluate the utility of "echo-encephalography."

Dr. Randolph K. Byers has completed several clinical studies, including a review of the course and outcome of acute toxic encephalopathy, and a study of the clinical expression of Huntington's chorea in children. In collaboration with Dr. Stuart Brown, he has begun a review and

electromyographic study of the large CHMC experience with muscle and multiple peripheral nerve disorders in children. Dr. Brown has also begun a review of the clinical syndrome of thalamic tumors in children. Dr. Jordan Joseph is engaged in an investigation of a group of brain damaged children with a battery of neuropsychologic tests designed to evaluate the reasons for the specific learning disabilities that frequently arise in this group of patients.

Training Program

In addition to the recently organized laboratory research program, the most important new development in our department has been the inauguration of a three-year training program in neurology in association with the Peter Bent Brigham Hospital. Dr. H. Richard Tyler, who also serves on the CHMC staff, has the primary responsibility for the adult aspects of the clinical program. The combined hospitals were approved for three-year residency training in neurology by the AMA and the American Board of Neurology and Psychiatry, and we were awarded training grant support by The National Institute of Neurologic Disease and Blindness. The first residents in this program began their work in July, 1964.

We have continued to provide a one year experience in child neurology for selected individuals, as well as the one year specialized experience in convulsive disorders and EEG, under Dr. Lombroso's guidance. Dr. Floyd Gilles, neuropathologist at CHMC, has made a most valuable contribution to the residency training program, and those individuals who participate in the three-year program spend six months in neuropathology. Our teaching of medical students has been expanded under the new Harvard curriculum. The combined Children's-Brigham service now has the responsibility for presenting neurology to a portion of the class in the three months Introduction to the Clinics Course, and we also have students for their three weeks' neurology clerkship in the Principal Clinical Year. A required neurology clerkship is a new feature of the curriculum, and we share this teaching opportunity with the neurology departments at the Massachusetts General Hospital and the Boston City Hospital.

Personnel Changes

As indicated in the introduction, Dr. Byers has retired to a position of Consulting Neurologist. I am certain that none of the consultants of the hospital is consulted more frequently. Fortunately for the department, he is willing to continue to devote his full attention to our program, and we all profit by his wisdom and example.

Plans for the Future

The most exciting future plans for the department revolve about the proposed major expansion of out-patient and research facilities at CHMC. The out-patient building will enable us to improve and expand our current efforts in the important field of ambulatory care for children with neurological problems. In particular the multidisciplinary Development Evaluation Center for Mental Retardation will provide a unique facility for diagnosis and management of one of the most frequent and frustrating problems with which we deal. In addition, the development of research facilities for the investigation of problems relating to mental retardation will provide much needed space for departmental laboratories. However, of greater importance is the opportunity for close association with other clinically oriented investigators in related fields of neurological and behavioral science. We will also have a unique opportunity to associate and collaborate with the senior full time basic scientists who will be recruited as part of the research program that will be developed.

Charles F. Barlow, M.D.
Neurologist-in-Chief

	1963	*1964*
Patients days on Neurological Service	2085	3317
Neurological ambulatory clinic visits	962	1092
Out-patient department neurological consults	no data	1028
Hospital neurological consultations	no data	651

House Staff and Fellows

Stuart B. Brown	1963-64	U.S.
Jordan Joseph	1963-64	U.S.
Thomas W. Kelly	1963-65	U.S.
Donald F. Manger	1963-64	U.S.
Giuseppe Erba (Seizure Unit)	1963-65	Italy
Pinchas Lerman (Seizure Unit)	1963-65	Israel
John C. Peters	1964-65	Canada
Halford S. Whitaker	1964-65	U.S.
Arnold Kravatz	1964-65	U.S.
Donald J. Fishman	1964-66	U.S.
Dibyendu Basu (Seizure Unit)	1964-65	India
Ruthmary Deuel	1964-67	U.S.
John P. Allen	1964-66	U.S.

During the hospital fiscal year 1963-1964 the Neurosurgical Service has continued to expand all three phases of University medical activity; namely, patient care, teaching, and clinical and laboratory research. The service has continued to function from a staff and training point of view in close affiliation with the neurosurgical service of the Peter Bent Brigham Hospital, perhaps providing a prototype for closer affiliations of other departments in the Children's Hospital with the "Complex" of the future. The neurosurgical service has enjoyed working in close cooperation with the expanding clinical and training activities of the neurological services at the Children's Hospital Medical Center as well as at the Peter Bent Brigham Hospital.

In the 1962 annual report it was noted that although we continued to act as a community hospital for common pediatric neurosurgical problems, there was more and more tendency for the service to become a referral area for complicated and unusual problems coming from a wide geographic area and referred often by other neurological and neurosurgical specialists. This general trend has continued so that our percentage at any one time of complex and unusual neurosurgical problems is apt to be unusually large. Also, we find ourselves dealing increasingly with the special social, personal and economic problems which arise from the care of many children who are referred from out of state or from other countries. The addition of our own social service worker again, Miss Carol Van Tassel, and the assignment of Mrs. Elizabeth Pederson to the Service from the educational and play therapy division have been of great assistance.

Training Program

The neurosurgical service offers in cooperation with the Peter Bent Brigham Hospital a four-year training program to men who have completed one or two years previously in general surgery. Three years are spent on the clinical neurosurgical service and the fourth year is spent in medical neurology, neuropathology, neurophysiology, in the research laboratories, or in some combination of these disciplines according to the interests, needs, and abilities of the trainee as decided in conference with the director of the program. Regular teaching conferences are held as follows: 1. Combined medical neurology-neurosurgery, 2. Neuroradiology, 3. Microscopic neuropathology, 4. Brain cutting, 5. Electroencephalography, and, 6. Service meetings, including death and complication reviews. In addition, neurosurgical trainees are encouraged to attend the twice weekly evening seminars in the neurological sciences given at the Harvard Medical School for all trainees in the Boston area.

We have enjoyed a steady stream of trainee and staff neurosurgical visitors from other neurosurgical centers in the United States as well as from Central and South America, Europe, and Asia. It is becoming evident in more and more centers that there are distinct advantages to the operation of a specific service directed toward the care of neurosurgical problems in infants and childhood. We have many requests, therefore, to train men in this field, and also requests from children's hospitals and university neurosurgical centers for men who have been trained here who might join their groups to specialize in pediatric neurosurgery.

It is hoped to start work within the next year on a new edition of the textbook "Neurosurgery in Infancy and Childhood," written by Dr. Ingraham and Dr. Matson, and published in 1954. Also, there has long been felt to be a need for a teaching atlas of neurosurgical techniques of the type so well done by Dr. Zollinger and Dr. Cutler for general surgery. With the aid of Miss Mildred Codding, surgical artist of the Peter Bent Brigham Hospital, a start on this project, involving both adult and pediatric neurosurgery, has been made.

The major clinical interests of the neurosurgical service continue in the areas of congenital disturbances of the central nervous system and its coverings, the surgical treatment of convulsive disorders in cooperation with Dr. Lombroso in the Department of Electroencephalography, the management of tumors involving neuroendocrine disturbances in cooperation with Dr. John Crigler in the Department of Endocrinology, and neuro-musculo-skeletal disorders in cooperation with the Department of Orthopedic Surgery. During the past year, an extensive study of all of the intraspinal tumors of childhood was carried out in cooperation with Dr. Mihran Taschjdian, stressing the importance of early diagnosis, prompt surgical therapy and continuing orthopedic follow-up care to obtain the best results. An exhaustive follow-up study was conducted with the help of funds from the general research grant of the National Insti-

tutes of Health, and this work will be published in the Journal of Bone and Joint Surgery. Under the guidance of Dr. John Shillito, studies of intra and extra-cranial cerebrovascular disease, partially supported by the Joint Study of Extracranial Vascular Stenoses sponsored by the Public Health Service has continued. Newer techniques for angiography and small vessel surgery continue to improve the outlook for "strokes" during childhood. Intracranial tumor surgery continues to occupy a major portion of our time and has been facilitated in recent years considerably by advances in diagnostic techniques in neuroradiology, isotope scanning, ultrasound scanning and electroencephalography.

Research

In August, 1963, Dr. Joseph Galicich joined our Staff after completion of his training at the University of Minnesota. He has become a most active, welcome, and stimulating addition to our group. He has been in charge of the neurosurgical research laboratories in the Carnegie Building at the CHMC and has also helped in our coverage of the neurosurgical consultations at the West Roxbury Veteran's and the Lemuel Shattuck Hospitals.

During the past year the activities of the Neurosurgical Research Laboratory have been directed primarily to setting up and developing procedures and instrumentation for the projects which will be the main concern of the laboratory for some time to come. These projects include human sterotaxic surgery, brain-adrenal cortex relationships, the use of ultrasound for diagnosis of intracranial pathology and the use of hyperbaric oxygenation in cerebro-vascular disease and surgery. Dr. Galicich has been joined by Dr. Karl Hovind from the University of Oslo to pursue these projects.

Funds made available by the C.H.M.C. from the general research support grant of the N.I.H. have enabled us to design and construct a human stereotaxis system. This system, now completed, will be used for both treatment and investigative purposes. Stereotaxic operations in those diseases in which such surgery has been shown to be of benefit, e.g. Parkinson's disease, choreoathetosis and the dystonias will be combined with recording from sub-cortical structures, and evaluation of the effects of electrical stimulation of various nuclei on the EEG, EMG, respiration, blood pressure and voluntary responses. Stereotaxic amygdalectomy is also contemplated in selected patients with chronic and incapacitating behavioral disorders.

Special emphasis will be placed on the development, in animals, of a stereotaxic operation for the reduction of spasticity. If successful this may be applied to the human with cerebral palsy.

Brain-Adrenal Relationships

The Nelson-Samuels method of determination of 17-OH corticosteroids in urine and blood has been set up. These determinations will be used as end points in several clinical and laboratory investigations. Studies of 17-OH corticosteroid excretion in patients with pseudotumor syndrome, and increased intracranial pressure from other causes are underway. The effect of glucocorticosteroid administration on the production of cerebrospinal fluid is also being determined.

In the laboratory, investigations are proceeding on the circadian periodicity exhibited by the adrenal corticosteroids. In this regard, a method for frequent sampling of adrenal venous effluent in the awake dog is being pursued. The action of corticosteroids in relieving cerebral edema and their effect on cerebro-vascular permeability is also a major interest of the laboratory.

Ultrasonic Diagnosis

In cooperation with members of the Department of Neurology under Dr. Cesare Lombroso, the use of an ultrasonic scanning system for the detection of intracranial pathology has been evaluated during the past year. Clinical techniques in the use of this system have been devised and some modifications of the instrumentation have been carried out. A report of this work has been submitted for publication. This work, both clinical and experimental, will be continued with the Department of Neurology.

Hyperbaric Oxygenation in Cerebro-Vascular Occlusive Disease

Investigation into the use of hyperbaric oxygenation for protection of the brain in the stroke syndrome and during cerebro-vascular surgery is contemplated. Operative techniques for occlusion of cerebral arteries in dogs have been developed and their effects under normobaric conditions have been evaluated. This work will be extended to hyperbaric conditions when these facilities become available.

Personnel

On July 1, 1964 Dr. Franc Ingraham retired from his duties as Associate Professor of Surgery at the Harvard Medical School, Neurosurgeon-in-Chief at the Children's Hospital Medical Center, and Neurological Surgeon to the Peter Bent Brigham Hospital. On the same date Dr. Donald D. Matson was appointed Neurosurgeon-in-Chief to succeed Dr. Ingraham.

Prior to 1929, all children in this area with neurosurgical problems were housed at the Children's Hospital but brought to the Peter Bent Brigham Hospital for operation by Dr. Harvey Cushing and his associates. Dr. Ingraham, who trained at the Peter Bent Brigham Hospital in surgery and neurosurgery with Dr. Cushing, was the first to organize and direct a specific service for pediatric neurosurgery in the years which followed. When Dr. Cutler's duties with civil defense and then active military service took him away from hospital responsibilities at the Peter Bent Brigham in 1940, Dr. Franc Ingraham took over active charge of the neurosurgical patients at both the Brigham and the Children's Hospitals. This led to formation of a combined neurosurgical service and specialty training program which has since constantly expanded. During the years between Dr. William E. Ladd's retirement and Dr. Robert Gross's appointment as Surgeon-in-Chief at the Children's Hospital, Dr. Ingraham acted also in this capacity.

Dr. Ingraham inspired a series of able men to enter the field of neurosurgery and carry it forward. His students are now in university positions at Harvard, New York University, Dartmouth, Bowman Gray, Emory, Western Reserve, Stanford, Kansas, Toronto and Dalhousie.

In addition, other men are practicing neurosurgery with a special interest in the care of children. Young men have always liked to work for and with Dr. Ingraham. His thoughtfulness and unselfish efforts to further the causes of his associates and students have benefited many. He has always been considerate to and therefore a favorite of nurses, technicians and hospital workers of all types. Dr. Ingraham's ability to see so quickly the important features of a clinical problem and his precise technique in the operating room were a constant source of inspiration and stimulation to many young surgeons.

Following World War II Dr. Ingraham directed the establishment of the neurosurgical research laboratory in the Carnegie Building of the Children's Hospital. This has been actively functioning ever since. Dr. Ingraham served neurosurgery in many other capacities and is highly respected throughout this country and abroad. He served on the study section of the National Institute for Neurological Disease and Blindness and as a member of the American Board of Neurological Surgery. He was president of the Harvey Cushing Society from 1944-1946. He belongs to numerous surgical, neurosurgical, and pediatric societies. His interest in legerdemain also led him to membership in The Society of American Magicians. In addition to professional duties at the Peter Bent Brigham and Children's Hospitals, Dr. Ingraham has been for many years extremely active as neurosurgical consultant to the Beverly Hospital. His devoted and highly respected services there have resulted in a steady stream of clinical problems referred to the Children's neurosurgical service. His host of friends and former patients in the Boston and North Shore areas long have contributed both morally and financially to the work of the department. Dr. Ingraham has established an office at 319 Longwood Avenue and we all hope he will continue to visit his friends and the clinical activities at the Children's as often as possible for many years to come.

On assuming formal direction of the combined neurosurgical services and training program of the Children's and Brigham Hospitals, Dr. Matson has the assistance of Dr. John Shillito, Dr. Joseph Galicich, and since July 1, 1964, Dr. Francis Rockett. Outside activities beyond the Harvard Medical School sphere continue to demand time of the neurosurgical personnel. Dr. Matson was elected vice-chairman of the American Board of Neurosurgical Surgery in April of 1964. He continues to serve on the Residency Review Committee for neurosurgical representative to the Special Medical Advisory Group to the Veterans Administration. He has been active during the past year with other members of a special commission created by the Board of Neurosurgery in devising and implementing a trainee examination to evaluate all neurosurgical trainee programs and trainees during the course of their residencies. Dr. Matson has been elected to the Editorial Board of the Journal of Neurosurgery. In May of 1963, he undertook an extensive trip under the aegis

of the American Specialists Abroad Program of the United States State Department giving lectures, operating, and seeing patients in Spain, Lebanon, Iran, Turkey, Greece and Norway. Some fifteen lectures were delivered during this four-week trip. Many friends of the Children's Hospital were encountered in all of these countries.

Post-graduate teaching continued at a variety of other types of national and international meetings. In November Dr. Matson gave two formal lectures and participated in two panels at the Pan-Pacific Surgical Association in Honolulu. Other major talks were given at the Loma-Linda University Post-Graduate Teaching Program in Los Angeles, the Interurban Neurosurgical Society in Chicago, the Harvey Cushing Society in Los Angeles, and in September of 1964 at the Congress of Scandinavian Neurosurgical Societies in Oslo, Norway. Dr. Matson also served as moderator of the Alumni Program at the Harvard Medical School Reunion Exercises in June of 1964.

Dr. Shillito, in addition to his special interests in the cerebrovascular diseases, has carried a large portion of the teaching load and supervision of the clinical service. He reported his studies on carotid arteritis at a joint meeting of the British Neurosurgical Society and the Neurosurgical Society of North America in London. He also participated in the Annual Work-Shop Conference of the Joint Study of Extracranial Vascular Obstruction in San Francisco. He has assumed a monumental task in serving as editor of the volume called "Clinical Neurosurgery" which is the annual publication of the proceedings and programs of the Congress of Neurological Surgeons.

The bulk of the work in day to day clinical care of patients in the outpatient department, wards, and operating rooms, as well as in the carrying out of innumerable consultations and neuroradiologic diagnostic procedures, is in the hands of our very active resident staff. In addition to the men listed, who were all career trainees in neurological surgery, we have had the assistance of Fellows from the neurology service, each for a three-month period, and also surgical house officers from the Peter Bent Brigham Hospital, each for a two-month period.

During the two-year period covered by the list, Dr. Larry Page went to the Beverly Hospital for six months and Dr. Edward Katz for part of this time to Queen's Hospital in Honolulu for additional training in general surgery. In addition, during this period, chief residents from the neurosurgical programs of the New York Neurological Institute of Columbia University, the University of Cincinnati, and the Yale-Hartford neurosurgical program have each spent periods of one to three months on the service as observers.

Donald D. Matson, M.D.
Neurosurgeon-in-Chief

STATISTICS
October 1/63 - September 30/64

ADMISSIONS		625
Congenital Anomalies	230	
Infections	32	
Intracranial Tumors	70	
Spinal Tumors	17	
Trauma	155	
Miscellaneous	121	
DIAGNOSTIC PROCEDURES		195
OPERATIONS		355
Intracranial	177	
Intraspinal	41	
Others	137	

NEUROSURGERY
House Staff

Chief Residents
Erich S. Wisiol
David L. Kelly, Jr.
Francis X. Rockett
Michael J. Jerva

Senior Residents
David L. Kelly, Jr.
Ronald Birkenfeld
Joe D. Beals, Jr.
Larry K. Page

Junior Residents
Edward L. Katz
Alan D. Rosenthal

These two years have shown a steady expansion in the activities of our Service. The total hospital days, exclusive of those in the rehabilitation Respirator Unit, were 17,259 in 1962-63, and 18,573 in 1963-64. Using the 1961-62 figure of 15,857 as a base, this represents an average expansion each year of just over eight percent. Operative procedures showed a seven percent increase over the 1961-62 period.

With this increase in hospital days, the average length of stay for each patient has decreased each year. For example, in 1960 it was 13.9 days, in 1961 11.9 days, in 1962 11.6 days, and in 1963-64 10.7 days. This decrease in time of hospitalization is a reflection of the effectiveness of the treatment of patients, as well as other factors, but it does indicate that even in a department which deals with crippling conditions, the average length of hospital stay is far from long. The percentage of occupancy of orthopedic beds was upgraded during these two years; in 1962-63, 84.4 percent was the average occupancy and in 1963-64 it was 90.6 percent. This is a significant figure when one considers that many orthopedic admissions are elective as to time, and tend to be seasonal in relation to the patient's schooling and the wishes of the family. We have made every effort to smooth out our curve of admission but it still remains a factor. At times our floors overflow and orthopedic patients are housed in other areas. When this adjustment is made, there were in 1963-64 18,716 bed days in the hospital proper and 4,019 days in the Good Samaritan rehabilitation division, making a grand total of 22,735 orthopedic bed days.

Our general orthopedic clinics have expanded and showed a 10 percent increase between 1962-63 and 1963-64 whereas the total number of visits to all clinic areas was up only one percent. That this gain is not more is reflected in the fact that with our changing economic pattern and insurance coverages, more patients are seen in the offices of members of our staff, both in and outside of the hospital, and these are not represented in the figures. The discrepancy in figures between the general Orthopedic Outpatient and the total clinical visits arises from the fact that our Poliomyelitis Clinic, which was once such an active area, showed a 30 percent decline between 1962-63 and 1963-64, so that the clinic visits to the Massachusetts Infantile Paralysis Clinics were only 2,104. When this is related to the 10,182 visits to this Clinic in 1956, one can appreciate the changing pattern in this disease and in the activities of our Service.

Poliomyelitis — Disease of the Past

Not too many years ago, one of the major interests of our Service was the treatment of poliomyelitis in all its stages: the acute disease, the subacute phase, and the chronic stage. The rehabilitation of patients with this disease formed a large share of our activities and a great proportion of our hospital days. Restoration of function by surgery to patients with poliomyelitis formed a large share of our surgical procedures.

Many of the contributions to knowledge regarding the disease and its handling were developed in this hospital: treatment during the acute stage, the development of the original respirator, the rehabilitative measures in the subacute and chronic phases, and many of the surgical procedures that were so useful in rehabilitation, and, finally, the growth of the virus in tissue culture by Dr. John Enders which, in turn, led to the vaccine and the ending of all this. The problems of this disease were challenging. The pathophysiology of developing deformity and the shifting of forces to correct it gave great insight into the problems of the musculoskeletal system, generally, and their solution. This was the field of major interest for the present Chief of Service for many years — I miss these problems but, thankfully, the disease in our country is essentially one of the past. This change in activities of our Service emphasizes most dramatically the shifting pattern of disease as major gains are made in prophylaxis or in treatment.

At the Clinic, the rehabilitation and supervision of patients affected by poliomyelitis continues but their number decreases every year. Since the Staff of this Clinic represent special skills in the treatment of neuromuscular disease, it has seemed wise to broaden its base so that it is concerned with the treatment of other diseases in this general category as well. Patients with muscular dystrophy, for example, have been shifted to this area so they will have the benefit of the personnel in the Clinic. This serves, in fact, as a Neuromuscular Treatment Clinic.

Combined Effort Strengthens

Certain activities of the Department are not reflected by the statistics in patient care, in that they represent a combined effort of various departments in special clinical areas. The Cerebral Palsy Clinic, in which our Service combines with the Pediatric and Neurology Services in a conjoined program, is an example of this. Each department has its contribution in making the whole effort stronger than would be provided by a single department with interests in this field, yet each has its own particular area of responsibility. Another example of combined departmental effort has been the establishment of the Arthritic Clinic in which Pediatrics and Orthopedics contribute to a combined program.

The past two years have been a period of transition for *the Mary MacArthur Memorial Respiratory and Rehabilitation Unit,* with a decreasing number of patients requiring respiratory assistance, and more requiring rehabilitative and convalescent care. The overall occupancy during these two years was 71.7 percent in 1963 and 74.8 percent in 1964. Respiratory patient days decreased from 653 in 1962-63 to 408 in 1963-64. With the decreasing incidence of poliomyelitis, the rehabilitation of patients with other neuromuscular diseases and orthopedic conditions which require long-term care and rehabilitative measures have increased in number. In this capacity this unit is a very valuable adjunct to the hospital. When it is used for the convalescence of patients who have been in the new hospital, we have had some difficulties arising from the fact that the charge in the convalescent unit is just as much as that in the active hospital. Patients who are making the move from the new hospital to the old compare the physical facilities and are likely to complain, and on occasion insist that they not be transferred. On the other hand, patients who have been in the Respirator Unit and felt its warmth and the good fellowship there are happy to return. This Unit is an important part of our hospital and its use should be strengthened during the coming year.

Research Activities

Effective July 1, 1963, the Department obtained a Research Training Grant supporting not only a fellowship program but certain other areas as well. This assisted us in expanding the activities of the staff and of research fellows in our program. Dr. Jonathan Cohen is a co-director of this research training program in conjunction with Dr. Green, and, more recently, Dr. Arthur Pappas has played a very active part in its activities.

There have been five fellows in the fellowship program. Two of these were appointments in July 1963, and three in July 1964. All concerned with the program, both staff and fellows, have entered into it with enthusiasm. A breadth of training experience has been developed for the Fellows, each having a variance in his program, one from the other, with the individual fellow having a degree of selection in his activities. Some feeling of their accomplishment may be given by recording some of the special projects of the two who have completed their program and started their clinical service.

Dr. Norton Lithwick, in addition to his participation in the general training program, has been using the Laser beam to vaporize bone and spectroscopically analyze the gases for their content. He has also been delineating the vascular supply of the femoral head by injection, and has been concerned with a study of the growth and development of the hip. He prepared a paper with Dr. Cohen which was presented at the forum of the American College of Surgeons in October 1964. Dr. Mohinder Mital has, amongst other things, learned the techniques of tissue culture, has been one of the participants in a study of metal toxicity using tissue culture techniques, and has made a study of medullary bone repair in the rat femur after various types of trauma. He, with Dr. Pappas and Dr. Cohen, presented a paper on "Tolerance of Cells in Tissue Culture to Metal Particles: New Assay Methods for Toxicity" at the January meeting of the Orthopaedic Research Society.

In 1963 the Hospital allocated a part of the I. C. Smith Building as an Orthopedic Laboratory and this was most helpful in alleviating some of the pressure for space. This building was remodeled by our Department with the generous support of Noemi No. 11, U.O.T.S., some Department funds, and the help of an anonymous donor. In addition, in 1964 it was necessary to repossess a part of the Saltonstall Laboratory. It was remodeled by our Department so that we could use one-half and the Cardiology Division could continue its activities in the other half.

These two laboratories form an active base for our Department, Dr. Pappas and the Fellows. In the I. C. Smith Building are facilities for biochemistry, general microscopy, radioautography, and an area for the long-term frozen preservation of certain specimens. In the Saltonstall Laboratory are the facilities for tissue and organ culture. Dr. Jonathan Cohen's laboratory is in the Children's Cancer Research Foundation, and our Service is indebted to this Foundation and Dr. Sidney Farber for this support of Dr. Cohen, who has a combined appointment in the Department of Pathology as well as in our Department.

Tissue Reaction

Dr. Cohen has many research interests but continues to emphasize his researches in tissue reactions related to metals and foreign bodies. With Dr. Pappas and Dr. Mital he has been concerned with the tissue reactions to various metals and alloys including the use of tissue culture as a method of assessment. An added observation has been the demonstration of the intracellular incorporation of metal particles and their transmission in cellular division. This technique is being used to evaluate the bone reactions of tissues to metals in order to form a more discriminating assessment of their use in surgical procedures. Dr. Cohen continues to study the cause of failure of metal implants. This field is becoming increasingly important as metals and other substances show an increasing surgical use. In this work he is assisted by a continuing grant from the National Institutes of Health.

Dr. Pappas is expanding his work in tissue culture and is developing a program of organ culture with an interest in the general area of teratology.

Dr. Eaton has been investigating the problem of certain circulatory responses and the problem of ischemia of an extremity in relation to the phenomenon of Volkmann's contracture. He has also been studying epiphyseal transplants and certain of the mechanisms of progressive deformity.

Dr. Henry Banks, whose laboratory is at the Peter Bent Brigham, continues his studies of the performance of bone, both normal and abnormal, as recorded by the performance of Ca47, by tetracycline, and by tritiated thymadine. In these studies he has had the association of our research fellows, Dr. Won Oh, and of William T. Green, Jr. In addition, Dr. Banks continues his study of fracture healing in joints and of the hip. We are indebted to Dr. Moore for his support of our projects at the Peter Bent Brigham.

Dr. Arthur Trott maintains his interest in circulatory abnormalities in relation to paralysis and is continuing his study of the impairment of respiration by scoliosis and of the effect of surgical correction of the curve upon the respiratory exchange.

Dr. Paul Griffin remains concerned with his investigation of joints and their clinical abnormalities. Various members of our Department are involved in various areas of clinical investigation.

Cerebral Palsy Study

One of the major research projects in the Department is clinical in nature and is concerned with the natural history of cerebral palsy and the effectiveness of various therapeutic procedures in its treatment. This study is under the auspices of the American Academy for Cerebral Palsy and its Committee on the Evaluation of Treatment, of which Dr. Banks is Chairman. In July 1964, Dr. Banks succeeded Dr. Mihran Tachdjian as Principal Investigator. This study is interdepartmental and includes, amongst others, Dr. William Berenberg of our Medical Services; Dr. Richard Tyler of Neurology; Dr. William Fitzgerald, psychologist; Dr. Allan Goodman of the Hearing and Speech Clinic; Dr. Robert Reed, Professor of Biostatistics of the School of Public Health, and our consultant on biostatistics; Elizabeth Zausmer, physical therapist; and Dr. Panos Panagakos, as a Clinical Fellow.

This study was initiated by the Academy following the address of Dr. Green, as President of the Academy, in which he emphasized that many radically different methods of treatment existed which were fostered by different groups of what might be called "schools of treatment", each convinced that its method was best and having little concern for all other techniques. It was deemed necessary, if constructive progress were to be made, to develop a better understanding of the life history of the disease and to make an objective evaluation of the various "methods of treatment". To this end it was proposed that a major study be fostered by the Academy under a "Committee for the Evaluation of Treatment" whose purpose it would be

to develop an objective record which could be used in a comparative study involving multiple clinics. This study has been in progress here at Children's and has been a monumental task. A record has been evolved and tested on the cases under study. It has reached the stage where a few selected centers are being enrolled to test the record for comparative study.

The Growth Study, under the active supervision of Margaret Anderson, continues its investigation of the problems of growth, particularly those related to abnormalities of the lower extremities and their correction. This continues to be a most rewarding area of exploration. As was emphasized in our last report, the Growth Study is not only a larger area of research but is an active unit in the care of patients as well. In the two years of this report, there were approximately 4500 visits to the Growth Study. This study is supported in part in its research activities by a grant from the National Institutes of Health, and by the continuing support of Noemi No. 11, U.O.T.S., whose great generosity includes gifts in support of the Functional Training Room and the new Orthopedic Laboratory in the I. C. Smith Building as well.

Staff Activities

Our staff is responsible not only for the care of patients at The Children's Hospital Medical Center but also is largely responsible for the care of orthopedic patients at the Peter Bent Brigham Hospital and the West Roxbury Veterans Hospital. Furthermore, the staff is concerned with Harvard Medical School teaching, not only here at the Children's Hospital but at the Peter Bent Brigham Hospital as well.

With the introduction of the new curriculum for the third and fourth years in September 1964, a clerkship in orthopedic surgery became a required part of the curriculum for the first time. This will increase the responsibilities of our Department and the time which our faculty must devote to students. This change in the curriculum, however, in our judgment, is a great advance, and we are very pleased to meet this new and added responsibility.

The staff of a hospital such as ours has many responsibilities elsewhere if it is to represent the Hospital and the Medical School in an appropriate manner. In the national picture, for example, Dr. Banks has given instructional courses at the American Academy for Cerebral Palsy at its meeting in Miami in October 1962, and at the American Academy of Orthopaedic Surgeons in 1963 and 1964. He discussed "What's New in Orthopedic Surgery?" at the meeting of the American College of Surgeons in October 1962 and participated in a panel at the College in October 1963. Furthermore, he was a delegate for the National Society of Crippled Children and Adults to the World Congress on Rehabilitation at Copenhagen in June 1963. He is a member of the Committee on Scientific Exhibits of the American Academy of Orthopaedic Surgeons and was a Visiting Professor at Vanderbilt Medical School October 2-3, 1963.

Dr. Cohen served as a moderator at the Gordon Conference in 1963, and was a participant in 1963. He serves on three committees of the American Academy of Orthopaedic Surgeons: on Scientific Investigation, on Pathology, and the Committee on Surgical Implants. He was a Visiting Professor at Ohio State Medical School March 13-16, 1963, and serves as an Assistant Editor of the Journal of Bone and Joint Surgery. He is a consultant to the National Institutes of Health and in 1964 served as president of the Orthopaedic Research Society.

Dr. Griffin has had scientific exhibits at the American Academy of Orthopaedic Surgeons on Septic Arthritis in Children in January 1963, was a leader of a round table on Pediatric Orthopedics at the American Academy of Pediatrics in October 1963, and was on the faculty of the American Academy of Orthopaedic Surgeons Instructional Courses in January 1964.

Dr. Tachdjian served, in addition to his duties on the staff, as principal investigator for the Evaluation of Treatment of Cerebral Palsy of the American Academy for Cerebral Palsy until July 1, 1964. He presented a paper with Dr. Matson on the Orthopedic Aspects of Intraspinal Tumors of Infants and Children at the American Academy of Orthopaedic Surgeons in January 1963.

Dr. Trott has been the administrative officer of the orthopedic teaching program during this period. He gave an instructional course at the American Academy of Orthopaedic Surgeons in January 1963 on Surgery of the Foot, and was Visiting Professor of Orthopedic Surgery at Indiana University School of Medicine May 29-June 3, 1964.

The Chief of Service read a paper at the meeting of the American Academy of Ortho-

paedic Surgeons on "Obstetrical Brachial Plexus Paralysis: Its Residual Deformities and Their Management;" a paper on the Role and Scope of Orthopedic Rehabilitation at the Seminar for Orthopedic Education under the auspices of the Committee on the Skeletal System; participated in a symposium on education fostered by the Committee on the Skeletal System of the National Academy of Sciences in Dallas on the subject "What Does the Orthopedic Surgeon See as His Role in Teaching the Neuromuscular System?"; read a paper on Growth as it Affects the Hip Joint and Pelvis in September 1963, at the meeting of the Société Internationale de Chirurgie Orthopedique et de Traumatologie in Vienna; and, moderated a program on Problems of Growth and Discrepancy in Growth of the Lower Extremities at this same meeting. He served on various national committees including the Advisory Committee of the Vocational Rehabilitation Administration in Washington; the Committee on Graduate Education of the American Academy of Orthopaedic Surgeons; the Subcommittee on Children's Orthopedics of the Committee on Graduate Education, of which he was chairman; the Committee on the Handicapped Child of the American Academy of Pediatrics; the Advisory Council for Orthopedic Surgery of the American College of Surgeons, of which he was chairman; and as a Governor of the American College of Surgeons. He served as Samuel Higby Camp Visiting Professor of Orthopedic Surgery, University of California, March 15-26, 1964, and gave the annual Samuel Higby Camp Lecture. He was guest faculty of the Resident Seminar, DuPont Institute in April 1963, was a guest consultant of the Vermont Clinics of the Crippled Children's Services of Vermont August 5-7, 1964, and guest faculty of the Maine Orthopedic Seminar, Colby College, Waterville, Maine, July 22-23, 1964. Margaret Anderson and he were members of the faculty of the Instructional Courses of the American Academy of Orthopaedic Surgeons in 1963 in Miami and in 1964 in Chicago.

Dr. Banks, Dr. Cohen, Dr. Griffin, Dr. Trott, and Dr. Green participated as examiners for the American Board of Orthopaedic Surgery.

Staff Changes

There have been certain additions to our staff during this two-year period: Dr. Richard Eaton and Dr. Arthur Pappas, geographic full-time, and Dr. James G. Manson in a part-time category.

Dr. Eaton, after finishing his residency here in the combined residency training program on December 31, 1962, served as a resident in hand surgery at the Roosevelt Hospital in New York with Dr. William Littler for six months and then joined our staff in July 1963. He confined his work primarily to the laboratory for the ensuing year, and became more active on the clinical service September 1, 1964.

Dr. Pappas joined our staff July 1, 1964, following his residency training here in the combined program. Prior to his orthopedic training he was affiliated with the United States Navy Medical Center in Bethesda where he was in charge of the Tissue Bank and was associated with the Tissue Culture Laboratory of the National Cancer Institute. He was a fellow in our orthopedic laboratory here at the Children's prior to his clinical appointment. He has succeeded Dr. Tachdjian in his responsibilities in the orthopedic laboratory.

Losses from our active staff were Dr. Mihran Tachdjian and Dr. James Eldredge. Dr. Tachdjian resigned August 1, 1964, to become Orthopedic Surgeon-in-Chief of the Children's Memorial Hospital in Chicago and Associate Professor of Orthopedic Surgery at Northwestern University. Dr. Eldredge resigned in 1963 to assume private practice on the Cape where the sun is warm and the climate mellow.

Dr. William Elliston was on leave of absence in 1962-63, and became a Consultant for the following year 1963-64. The hospital is indebted to Dr. Elliston for his many years of devoted service. Dr. John Kuhns reached the age of retirement in June 1963. Dr. Kuhns has not been active at the Children's Hospital in recent years but was for a long time head of the Scoliosis Clinic here and was Chief of Orthopedics at the Robert Breck Brigham Hospital.

Our staff was grieved by the death of one of its most distinguished alumni, Dr. James Warren Sever, Orthopedic Surgeon Emeritus, who died in July 1964. Dr. Sever died in his 86th year. He graduated from Harvard Medical School in 1901 and his first hospital appointment was an intern at the Children's Hospital in that year. He was in 1906 first appointed to the orthopedic staff of the Children's Hospital where he served continuously until his retirement in 1949. He was a very outstanding con-

tributor to the development of orthopedic surgery and was best known for his work in obstetrical palsy and for a corrective operation in this condition which bears his name. He was a distinguished citizen and we grieve his passing.

Resident Staff — Graduate Teaching

Our Resident Training Program, which admits eight men to the 3½-year program each year, thrives. It continues to be a combined program with the Massachusetts General, the Peter Bent Brigham Hospital, and with secondary affiliations at the West Roxbury Veterans Hospital and, since October 1963, with the Robert Breck Brigham. There are many applicants of high quality.

Our main graduate instructional course effort is with our residents and fellows. There is such a shortage of orthopedic surgeons in the United States that we feel compelled to give the majority of our resident appointments to our own citizens. During this period we have had one resident from Lebanon, two from Canada, and one from India. Two of our clinical fellows have been from foreign countries — one from Greece, Dr. Panos Panagakos, and one from the Philippines, Dr. Jose Silao of Manila. Two graduate students have been from Thailand and the Philippines, respectively.

Plans for the Future

A teaching hospital such as ours starts on the base that it will provide the best of care for its patients but its obligations are much beyond this. It should be dedicated to the creation of new knowledge in medicine, to develop better methods of treatment, and to assume major responsibilities in the education of medical students, of physicians, and other workers in the field of health. It should be a hospital to which not only the local community but New England, the United States, and the world turn for its skills and knowledge. The Children's Hospital has long occupied this position but, as the advancing pattern of medicine quickens, it must move ahead even faster if it is to provide the leadership which has come to be expected of it.

People are the most important factor in the majority of advances provided the resources are available, and this is true of a hospital. The orthopedic staff, along with those of other services, needs expansion. In the strength of the expanding staff lies the future strength of our Department. Competition for superior candidates in orthopedic surgery is keen. The Children's Hospital and the Harvard Medical School have much to offer. Our weakest factor in attraction is the limited space that is available for orthopedic research. In the medicine of today the laboratory and basic biologic research play a greater and greater part, and our Department must enter this area with increasing strength. Our accomplishments in clinical medicine and in clinical research have been and continue to be at a high level and clinical opportunities are excellent. The laboratory and research, patient care, and teaching cannot be divorced, one from the other. Strength and opportunity in all three attract strong men.

The recently planned research laboratories on Longwood Avenue in which a floor is devoted to the neuromusculoskeletal system will be a big step in meeting these laboratory needs. The general research effort in the laboratories of this new building should serve as a synergistic stimulant to the total research effort of the hospital as well as to that of each individual department.

It is our plan to enlarge the orthopedic staff to a point where all members will have a part of their time available for research in addition to a specific portion of their time devoted to patient care and to teaching. At present, our staff is so busy in patient care that the maximal accomplishments in other areas cannot be attained. In addition to expansion of our full-time staff, it seems highly desirable to retain a part-time staff as essential contributors to the teaching program and the total community effort.

Add Basic Scientists

In addition to the clinical staff, it is proposed to add to our department basic scientists with special skills and interests in the biology of the neuromusculoskeletal system who will contribute their researches to the departmental effort and serve as catalysts and consultants to the research effort of other members of the department. On this background not only can the greatest gain be made in our research effort, but in improving the strength and total accomplishments of our department in all its clinical and teaching responsibilities.

We have been blessed in the past with clinical material of great variety. Our clinical position will be given great impetus by the new ambulatory Clinic Building upon which con-

struction will soon be started. The outpatient is where the hospital is introduced to its public. The new unit should add much to our image and should provide a new face for the whole hospital. Our inpatient service unit is an excellent one, although, recently, it is intermittently unable to meet the demands for beds by the department. With an expanded staff, the demand for beds could be expected to increase.

In the next step of construction, which we hope is not too far away, one of the needs for our Service as we see it is the provision for clinical research space, which hopefully might be on the sixth floor adjacent to our clinical floor. In this area should be an expansion of certain facilities related to the clinical floor (ward 26) and a small classroom; and here or in another area provision should be made for a rehabilitation and convalescent unit. This should be for the convalescence and rehabilitation of patients who do not need to be confined in the more active portion of the hospital. In relation to this unit, so that certain facilities might be used in common, consideration should be given to establishing a "day center" where patients may be brought for diagnostic observation and rehabilitative measures for as much of the day as seems appropriate. The general classification of such an area would be under rehabilitation but this would be an area for the study of patients, for their testing, and for direction of their treatment. There would be provision for vocational testing, for psychologic testing and observation, for evaluation of physical capabilities and abnormalities, and there would be such facilities as a shop, occupational therapy equipment, physical therapy equipment, and provision for the testing of skills and aptitudes. There would be an area for providing guidance and rehabilitative training. It would be a unit not only valuable to our department but to all departments. It should, in effect, be a consultative unit in an area where treatment might be started and supervised, and equipment would be available for inpatients and outpatients. It would not be an area for prolonged major rehabilitative programs.

On this floor, too, should be the headquarters of the Department, providing offices for the Chief of the Department, offices for other members of the staff and for the central activities of the Department.

In the total picture we see The Children's Hospital Medical Center as a unit in the Harvard Complex of hospitals providing comprehensive care for the child. We believe it can contribute most to the total effort of the Harvard Medical School and the community of hospitals by maintaining its physical integrity as a center devoted to the child. At the same time it should maintain its appropriate relation to the other affiliated hospitals which would provide comprehensive care for the adult.

As a department we would hope that our responsibilities would extend across all the affiliated hospitals, with particular members of the Department having special responsibilities in the individual units but with a free cross flow of staff throughout the various hospitals. Balance in an orthopedic staff requires that they have experience with both children and adults although individual members of the staff may have special interests in one or the other. Such a free flow in the Department makes appointments more attractive and will add strength to all areas.

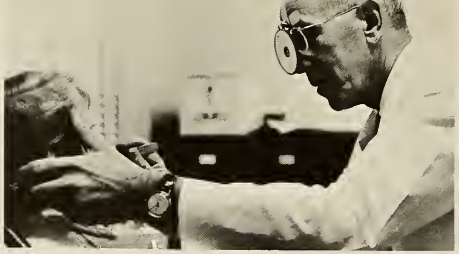
William T. Green, M.D.
Orthopedic Surgeon-in-Chief

ORTHOPEDICS
House Staff

Chief Resident
Seymour Zimbler
Felix Battat
Arthur M. Pappas
John Monahan
Robert First

Resident
Eric Radin
Eugene J. Morrissey
Hugh Chandler
Gordon Lupien
Seymour Zimbler
Khalil Germanos
Arthur M. Pappas
William G. Stewart, Jr.
Christopher Isensee
John Monahan
Edgar B. Thompson, III
William Bostic
Richard Conway
Lynn L. Ault
Michael Bell
Robert J. Boyd
Robert First
Robert Runyon
Kirby L. C. VonKessler

Assistant Resident
Eric Radin
Eugene J. Morrissey
James G. Rich
Robert E. Collins
William Sullivan
John E. Larkin, Jr.
Roderick Turner
Joseph Shaw
Charles Renshaw
Henry Urbaniak
William Thomas
Carl Brunjes
David Grainger
Richard G. McCollum
Benjamin Bierbaum
Edward L. Coffey, Jr.
William T. Green, Jr.
Patrick Logue



The activities of this Department have expanded in almost every way despite the fact that we occupy the same amount of physical space. New members have been added to the Active Staff, and among other events a special Ear Clinic has been started.

Dr. Robert W. Clubb, who has served as Resident and is now on the staff of the Massachusetts Eye and Ear Infirmary and the Peter Bent Brigham Hospital, was appointed Associate Otolaryngologist. Dr. Werner Chasin, also a former Resident and now Chief of the ENT Service at the Beth Israel Hospital, was also appointed Associate Otolaryngologist. Dr. Chasin's special interest lies in the field of reconstructive ear surgery and he has been largely responsible for the organization and running of the special Ear Clinic, to which chronic problems are referred for evaluation and treatment.

The most recent addition to the Senior Staff is Dr. Allen Greer Edwards, Jr., who was also formerly ENT Resident and is now a member of the staff of the Peter Bent Brigham Hospital and the Massachusetts Eye and Ear Infirmary. Following his residency, Dr. Edwards spent six months in Memphis with Dr. John J. Shea, Jr., one of the foremost otological surgeons in the country. This experience should be most useful in dealing with some of the more difficult ear problems we see in children. Dr. Edwards has been appointed Associate Otolaryngologist.

Teaching Activities

We have continued to participate in the teaching exercises of the hospital as usual, both on the postgraduate and undergraduate levels as well as in the instruction of nurses. Among the teaching exercises are a series of seminars held for Harvard medical students in the third year, who come to the Children's Hospital for part of their teaching program. In addition, we take part in specific exercises designated by the Department of Otolaryngology of the Harvard Medical School for second year students.

On the postgraduate level, a Senior Resident from the Massachusetts Eye and Ear Infirmary rotates through our service every ten weeks, receiving a concentrated course in Pediatric Otolaryngology. This has been a highly successful program and one which we hope to constantly improve. There is now an Eye and Ear Resident also at the Beth Israel Hospital, which allows rotation of night and holiday duty between the two Residents and gives the hospital better coverage.

Many of our Staff have participated in national and state meetings in various capacities. This has been a particularly active period for Dr. Ferguson who this year was President of the New England Otolaryngological Society. The fall meeting of this Society was held at the Children's Hospital Medical Center in the Jimmy Fund Auditorium with Dr. Ferguson in the Chair. The entire program was carried out by members of this Department with the cooperation of other departments of the hospital. The meeting was considered a great success by all who attended.

In May, Dr. Ferguson gave the Davison Memorial lecture at the Geisinger Medical Center in Danville, Pennsylvania. His subject was "Pediatric Broncho-Esophagology". Also in May, Dr. Flake gave a paper before the New England Cancer Society on "Juvenile Nasopharyngeal Angiofibroma". In April, Dr. Ferguson read a joint paper with Dr. Flake before the American Laryngological Association in San Francisco on "Congenital Choanal Atresia in Infants and Children". This report dealt with 40 patients who were born with bony obstruction of the back of the nose and were successfully treated by us. It is the largest and most successful series ever reported. In November, Dr. John Trakas spoke at the Interscience Conference on Antibiotics and Chemotherapeutics in New York on the "Use of Lincomycin in Ear, Nose and Throat Infections".

Ear Surgery Increasing

It is interesting to note the graduate increase in the amount of ear surgery which has occurred over the past seven or eight years. The advent of the operating microscope has made such surgery possible, and by constantly improving techniques for dealing with various disorders of the ear drum, middle ear and mastoid, what was impossible yesterday is commonplace today. For instance, it is now feasible to replace a completely missing ear drum using fascia from the temporal muscle or some other connective tissue and covering this with skin. Sometimes the hearing can be improved but, of equal importance in a child, is the sealing off of the middle ear space from the outside so that water from bathing or water sports does not enter the ear.

In a number of children, abnormalities of the ear bones, through which sound is conducted, have been corrected by the use of autogenous bone grafts or prostheses of various kinds, which can be left in the middle ear and often result in improved or normal hearing. Another considerable group of children have had mastoid operations associated with reconstruction of the hearing apparatus, in the middle ear, with subsequent return of hearing to a serviceable level. Thus the pendulum which had swung away from ear surgery during the antibiotic era has now swung back and much more can be done for ear disease than ever before.

In 1956 the Women's Committee provided us with an operating microscope, and this year the Committee gave us another similar microscope, with a camera attachment, which will enable us to make pictures of operative procedures for teaching and other purposes. Our equipment for ear surgery is now first rate thanks to these magnificent gifts.

While on the subject of equipment it should be recorded that we now have acquired a set of modern fiber optic bronchoscopic instruments. These are used for diagnostic work in the food and air passages and for the removal of foreign bodies. Using a brilliant light source at some distance from the object to be illuminated, the light is transmitted through a thin, pliable cable of glass filaments. This innovation eliminates the tiny and unreliable "grain of wheat" incandescent light bulb formerly used. It is a great boon to us in this work.

Since the arrival of Dr. Allan C. Goodman, Ph.D., to assume responsibilities as Director of the Hearing and Speech Clinic, there has been considerable activity in that area. Perhaps the most desirable method to report on these activities is to include his recent report to me, which follows:

Hearing & Speech Division

The summer and fall of 1962, the beginning of the period covered by this report, were characterized by a frank questioning of the functions of the department and the validity of its procedures. The intent of the questioning was to assess both actual and potential achievements in order to define a set of goals for the Hearing and Speech Division which would be consistent with the needs and purposes of the Medical Center and its obligations to the public and the professional communities.

The result has been two years of change affecting most aspects of operation, and ranging from a redefinition of professional philosophy to a reorganization of the details of day-to-day business management. A secondary result has been that a great many months during this period have seemed much longer than 30 days.

The essence of the change in philosophy is a recognition of the desirability of studying human communication in a broad context which recognizes: (1) that there is unity in the study of hearing, speech and language, whether normal or abnormal; (2) that the most fruitful clinical orientation is concerned with disorders of communication in general, as opposed to a restrictive concern with hearing disorders or speech disorders, or with evaluation alone or therapy alone; and, (3) that disorders of communication are a complex function of medical, social, and psychological factors and that a more realistic understanding follows from their study in the context of the individual child's assets as well as his liabilities. With a twist of syntax, these phrases define the goals.

Following from this point of view, there have been changes in staff and the gradual emergence of a unified and cohesive group of specialists. The attempt has been to develop a professional staff with a common core of knowledge in disorders of communication, and at the same time encourage each staff member to develop special interests and capabilities in one or more sub-specialty. To a considerable extent this has been achieved, and we now have, for example, individual staff members who are equally qualified in speech pathology and education of the deaf, in audiology and speech pathology, in audiology and education of the deaf. Similarly, individual staff members have special interests and competence in problems of pre-school deaf and aphasic children, stuttering, cerebral palsy.

Unification of Service

The functions of the Sarah Fuller Foundation in the education of deaf children have become an integral part of the activities of the Hearing & Speech Division. This has been a significant factor in the achievement of a unified service. It represents a broadening of the

scope of services supported by the Foundation to include evaluation as well as therapy and an extension of services to the hard-of-hearing and aphasic child. It has resulted in both increase in services and improvement in the quality of clinical care.

There have been changes, too, in the qualifications, composition, and size of the staff. In September of 1962 the professional staff consisted of five M.A.'s (full-time), five B.A.'s (part-time), and two Ph.D.'s (one full-time). As of September 1964, the composition changed to essentially a full-time staff with a higher level of academic preparation: four Ph.D.'s (2 full-time, 2 part-time), 8 M.A.'s (all full-time), and 1 B.A. (part-time). The minimum academic requirement for new staff is a master's degree. Equally, if not more important, is the fact that the present staff is not committed to any "school of thought": the approach to examination and therapy is eclectic. Further, the staff represents a national cross-section in terms of university training (Western, Mid-Western as well as Eastern universities). The bias in examination and therapy is an experimental one and is consistent with the methods of natural history in the study of disease.

Coincident with these changes, there has been a modernization of examination and therapy equipment, the addition of a second audiology laboratory, and the addition of space for increased examination and therapy services.

The changes in staff permit, in part, the development and expansion of specialty groups concerned with cerebral palsy, cleft palate, stuttering, reading and language disorders, mental retardation, preschool deaf children, preschool and older hard-of-hearing children. We anticipate a considerably expanded program in mental retardation, in cerebral palsy, and in cleft palate (evaluation, rehabilitation, and research) in collaboration with other divisions of the Medical Center, and an expanded research program with the Maternal and Infant Health study group. Further addition of staff and appropriate laboratory space will be needed, and are now planned, to complete the development of these specialty groups.

Business management methods have been changed in recognition of the existence and applicability of cost-accounting methods, and of machine records systems for accounting and statistical data. As a corollary to this we are now designing forms for patient records in a manner suitable for automated data retrieval as a means of facilitating clinical research.

The operations of the Division are presently carried out in four locations: 300 Longwood Avenue, 325 Longwood Avenue, Good Samaritan Building, and 83 Francis Street. This arrangement does not permit superior efficiency and actually limits our clinical and research effectiveness. We look forward, with some impatience but with much pleasurable anticipation, to relocation under one roof in the proposed new outpatient building.

We believe that clinical services are being provided in a satisfactory manner. The next steps in overall development of the division are aimed at additional refinements and improvements in clinical services, expansion of clinical services, and, as the next major step, the initiation of a research and teaching program.

These steps are largely dependent upon construction of the outpatient building. The new building will provide an atmosphere more congenial to a unified and efficient hearing and speech division, it will provide the additional space essential for expansion of clinical services, it will permit improvement of services which cannot be brought about now because of specific architectural limitations, and it will provide the facilities essential for the development of a research and teaching program.

None of the above would have been possible were it not for the full cooperation and enthusiastic support given me by Dr. Flake, to whom I am greatly appreciative.

Allan C. Goodman, Ph.D.
Director,
Hearing & Speech Clinic

The days ahead, for the Department of Otolaryngology as for all units of The Children's Hospital Medical Center, will be filled with stimulating challenge. We are confident these will be faced and solved, and that the record of service to children will continue to be an inspiration to all who are members of this department.

Carlyle G. Flake, M.D.
Otolaryngologist-in-Chief

The present report, including as it does a resume for the years 1962-1964, marks the activities and function of the Department of Psychiatry at the end of a decade of its existence. For in October 1953, the Department of Psychiatry was established and the affiliation then of the Judge Baker Guidance Center and the Children's Medical Center was effected. The specific aim of both the establishment and affiliation of these services was to create in the Boston community a children's mental health unit that could offer coordinated and comprehensive diagnostic treatment, training and research facilities for children from infancy through adolescence. Year by year these two institutions have endeavored to reach this ideal of comprehensiveness through the addition of new services, and through the expansion and enrichment of those "core services" with which they started. The need and timeliness of the formulations of our aims and hopes in the children's field in 1953, and since, are attested to by the fact that in the past two years the entire field of psychiatry (at federal, state and local levels) has dedicated its future to the establishment of comprehensive and coordinated community mental health centers and services for all the people in all of the states. As will be commented upon later, important items for discussion and decision in the immediate future are the ideal — and the possible — roles that the already established comprehensive Children's Hospital-Judge Baker mental health programs for children and their parents can and should play within the larger context of projected Federal and State supported community mental health centers. Because of this a survey of our present activities, though relatively brief and condensed, should constitute not merely a report to the Trustees and friends of the Children's Hospital Medical Center but should serve as valuable background data and material in helping us on decisions for the future.

The activities and programs of the Department of Psychiatry group themselves into four main areas of effort:

I. Psychiatric Service

II. Training of Mental Health Personnel

III. Education of non-psychiatric medical and non-medical personnel, and

IV. Psychiatric, Psychological and Social Science Research.

I. Service

Central Treatment Unit

The members of the Department of Psychiatry have always assumed that their primary responsibility was to offer mental health care to the children referred to (and within) The Children's Hospital Medical Center and to the large number of practicing pediatricians in the greater Boston community who are affiliated with the Center. Included in this child mental health care orbit are those affiliated or closely associated institutions, such as The Cancer Research Foundation, The Children's Mission, and the Boston Nursery for Blind Children. But in spite of our dedication to the over-all Children's Hospital role of comprehensive care of the child, the Department of Psychiatry just cannot meet all of the requests for the diagnosis, psychological evaluation, and particularly for the psychiatric treatment, of emotionally disturbed children coming to us from our physician colleagues in other areas and specialties in the Center.

The inability to meet all of these requests for treatment is due mainly to lack of resources for personnel and to the lack of space to house personnel if we had them. It is to be remembered that the lack of space is a problem of all of the departments at the Medical Center, and that it is a need that the Trustees and Administration have every intention of meeting in the relatively near future.

The psychiatric treatment of severely emotionally disturbed children — in any age category from the pre-school levels through adolescence — comprises a relatively long and time-consuming effort, working both with the child and his parents. Whenever indicated, and possible, shorter treatment procedures and referral to accredited outside child serving agencies are effected by our Intake and Assignment Committee.

Yet in spite of the decentralization of some of our treatment units and the lacks in personnel and space, there has been a steadfast increase in the number of children and their parents seen in all of the categories of psychiatric service of the Department.

Out-Patient Consultation Service

The out-patient consultation unit is designed to provide consultation for physicians and diag-

nostic evaluations for children referred by way of the various hospital clinics.

Two staff psychiatrists are available each morning for consultations in the Medical Out-Patient Department. There they discuss individual patients with the medical residents and frequently interview the parent and child. When possible, a disposition is made at the time of this consultation and sometimes the pediatrician is encouraged to follow the patient with the assistance of the psychiatrist. In many cases a further psychiatric evaluation seems appropriate and these children are given appointments in the follow-up consultation unit. The child and family then are seen for as many visits as necessary to establish a diagnosis and disposition.

The number of cases seen in consultation far exceeds the capacity of the central psychiatry clinic to provide psychotherapy. Thus, referral to outside agencies and clinics is an important and very time-consuming part of this work.

In addition to diagnostic evaluations, the consultation unit is able to provide short-term psychotherapy as a crisis-intervention measure to a small selected group of cases.

In-Patient Consultation Service

The functions of the In-Patient Service of the Department of Psychiatry comprise diagnosis, management and treatment of hospitalized patients, teaching, and research.

Many children are admitted to the wards with symptoms and signs for which no organic cause can be demonstrated. Nausea, vomiting, abdominal pains, headaches, visual disturbances, muscle pains, loss of appetite and inability to swallow are but a few of the complaints for which psychiatric opinion has been requested.

Certain diseases are associated with emotional factors. Ulcerative colitis, bronchial asthma, duodenal ulcer, lead poisoning, and obesity may be present in children with significant personality disturbances.

There has been a growing use of the hospital for the care of patients admitted with major psychiatric problems. Cases of acute psychosis, attempted suicide, behavior disorder, anorexia nervosa, and toxic psychoses have been treated successfully.

Neurological Consultation

The Neurological Service has for a long time been one where the issue of brain and behavior was constantly present. Over and over there have been presented clinical problems from the ward in which the differentiation between physical and emotional aspects of a child's behavior need to be distinguished. It has afforded an opportunity for the psychiatric consultant to learn himself more of unusual problems.

The volume of psychiatric consultation on this service and the variety of the problems have been such that it has provided a special opportunity for the psychiatry resident in training to see certain disorders in childhood which he might not otherwise have an opportunity to see or at least not to see as frequently. This would include, for example, unusual forms of encephalitis or problems in differential diagnosis in a child with various forms of epilepsy, or the always difficult problem of separating out factors of brain injury, maldevelopment or developmental emotional problems. Since the fall of 1964 one of the psychiatric residents has elected to spend several hours a week doing the neurological consultations, attending neurological staff conferences and taking an active part in the discussion of cases.

At the same time, since the fall of 1964, a program including some psychiatric experience for a neurological resident has begun. This program is intended to provide the neurology resident with some experience in observing children through the psychiatrist's eyes, not only by reference to psychiatric literature but by observing diagnostic evaluations of children with emotional disorders and eventually carrying out some of these diagnostic procedures himself under careful supervision.

M.I.H. Consultation

Since the fall of 1962 the Maternal and Infant Health Study has begun to refer for psychiatric consultation some of the children they have followed as part of the service they offer to the families and as part of the overall study and evaluation of the individual child. As of October 1, 1964, 27 children had been seen for consultation, ranging in age from three to about six, and from the very severely disturbed child to the child with little or no gross psychiatric problem. In addition to the detailed reports of

the consultation sent to the MIH study, the consultant has assisted in referring some of these families to other agencies for help.

This group of children offers many opportunities for study. For example, it is a group of families who might not otherwise have been referred at this early age by a hospital outpatient clinic or a family physician. It is a group of children on whom there have already been conscientious observations of maternal attitude, of maternal health since pregnancy, detailed observation around delivery and the child's immediate neonatal course. Thus one has a better than usual opportunity to correlate, for example, early neonatal health as indicated by the APGAR scores in subsequent behavior problems or perhaps learning difficulties, or the presence or absence of clinical or psychological evidence of brain injury not observable on gross physical or neurological examination. It does thus yet afford another chance to have recorded observations of maternal attitudes from pregnancy through infancy and early childhood and their possible relationship to development of emotional problems in childhood.

Family Health Service

For the past two years, Dr. Dexter Bullard has been the assigned psychiatrist to the Family Health Unit. Dr. Bullard's main functions in this unit have been to add a psychiatric dimension to the concern of the pediatrician and medical students in their evaluation and treatment of the patients who come to the Family Health Unit for care. Considerable emphasis is placed upon the expansion and enrichment of the training programs of the house officers and residents in the pediatric services of the hospital and the third and fourth year medical students who are in attendance at their case presentations and conferences. In addition to this, Dr. Bullard has initiated a very important research program relative to children who appear at this clinic following their hospitalization. He has also been psychiatric consultant to a well-defined research project beginning with the health needs and the acceptance of health agencies among the more deprived family groups in a nearby area of Metropolitan Boston.

Recreation Department

Since 1962 the recreation department of the hospital has, approximately, weekly consultations with a member of the staff of the Psychiatry Clinic. These meetings began with an effort to review some general aspects of child development through the medium of brief presentation of problems seen in children of different ages during their hospitalization. As it has evolved, the recreation department has become an important bridge between the child's home and family and the hospital. Although the core of many of our discussions has been a particular child and his response to hospitalization and illness, we have also discussed ways of helping the hospital to know more of the child's idiosyncrasies, his favorite toys, pets, nicknames, and so on — again in order to decrease the impact of hospitalization and separation.

Out of our meetings has evolved a better picture of the role of the recreation worker in the hospital and the contribution she can make in ward meetings, in direct involvement with the child, all of which can contribute to an improvement in the total care of a child in this setting.

Adolescent Services

The psychiatry unit that works specifically with adolescent patients is under the direction of Dr. William Crowell. Within this unit psychological examination and personality evaluations are done by one of our staff psychologists and the treatment or referral procedures are carried out by the clinic team located therein. Many of the referrals to this unit come from the Adolescents' Unit and others are referred directly by pediatricians within the hospital or outside in the nearby communities. In addition, two of our child psychiatrists, Dr. Herbert Harris, and Dr. Graham Blaine, are associated with Dr. Gallagher in the Adolescents' Unit itself, acting as consultants to the various pediatric specialists.

Fathers' Group

During the past two years Dr. Alan Prager has met on a weekly basis with a group of fathers of children being treated in the Psychiatry Clinic. His objective is to offer interested fathers the opportunity to discuss the problems of their children with a view towards giving them greater understanding of them.

The individual fathers in the group have become more aware of the fact that their situation is not a unique one, and that the other fathers

for whom they have respect, have similar problems. Because of this they are the better able to see their role in the family and the effect of their attitudes toward their children to the end that they become much more of a constructive help to the mother in the care of their children.

II. Training of Mental Health Personnel

Career Child Psychiatry

Dr. Tully Benaron is the Director of Training of Career Child Psychiatry, a program in child psychiatry affiliated with the three-year psychiatric residency program of the Massachusetts Mental Health Center, accredited for both career and rotational training in child psychiatry by the American Board of Psychiatry and Neurology and its sub-specialty Board in child psychiatry, and "approved" as a training clinic of the American Association of Psychiatric Clinics for Children. In addition, it is a unit of the teaching orbit in Psychiatry of the Harvard Medical School Department of Psychiatry. The Psychiatrist-in-Chief of this clinic is a Clinical Professor in the Medical School Department and represents the field of Child Psychiatry on its Executive Committee.

As in past years, the training program of this hospital is in some aspects a coordinated program offered in conjunction with some of the training functions of the Judge Baker Guidance Center. This coordination between the hospital department and the guidance center has greatly enriched the training program offered by our department, through the establishment and development of an "in patient division" within the Judge Baker for adolescent patients (26 beds); the establishment and development of a Psychiatric Day Care Program in the Judge Baker's Manville School; and the addition of a day nursery for pre-school children at the Judge Baker.

Furthermore, a clearer differentiation of the "case types" of children with emotional and behavioral disabilities that are under the supervised care of our trainees has been possible. The hospital can provide an adequate number of children for psychiatric care and instruction who are suffering from psychosomatic problems, from associated illnesses and congenital defects, and from all of the physical disabilities of childhood; whereas the out-patient division of the Judge Baker receives on referral children from the Boston Metropolitan Community at large through referrals from various social agencies, schools, and juvenile courts.

These differences in emphases of "case-types" accepted for treatment in the two institutions enable us to present the trainee with the widest possible clinical experience in child (or, indeed, "family") psychiatry. Finally, this Department has a training affiliation with the James Jackson Putnam Children's Center for an "elective specialization" by its second year trainees who wish to broaden and deepen their knowledge to deal with maladjusted infants and pre-school children and their families.

As can be seen, the basic philosophy of the program is the felt necessity to offer to all of our trainees the widest possible variety of children's cases needing psychiatric consultation, diagnostic and treatment services.

The main emphases in the training program of career child psychiatrists are, of course, training relative to the diagnostic evaluation of emotionally disturbed children and the psychotherapeutic treatment of children and parents. Both of these aspects of training are carried out within — and with emphasis upon — the community context and relationships that impinge upon the developing child and his family members.

Training in diagnosis and consultation is carried out on both the Out-Patient Division and the In-Patient wards of the hospital under the supervision of staff training psychiatrists.

The training for psychodynamic understanding and for a sophistication relating to child personality tasks in development, their phases and possible resultant phases and disabilities, and training in individual psychotherapeutic techniques with children are carried out in the central treatment clinic — again under the supervision of trained child psychiatrists.

Pediatric Psychiatry

During the past two years we have had a training program for Board eligible pediatricians operating parallel to our definitive Child Psychiatry residency training with four pediatricians in training each year. From the very beginning our basic aims have been to insist that these physicians retain their own professional identity (usually pediatrics) and, con-

versely, to have it clearly understood by them and by the training staff members of our own Department that we were not trying to make child psychiatrists out of them.

In addition, we have stressed the importance of the use of facilities of the allied public and private health, education, welfare, family and the varied social service agencies, the role of the personnel of such agencies, and the criteria of selection of cases (and methods involved) for referral to them. In all of our training efforts we have tried to emphasize the importance of *prevention* — through early detection, early intervention and early re-referral when indicated.

This training program was generously supported by the US Public Health Service, National Institute of Mental Health, as are other of our programs.

Pediatric Residents

We have continued our educational and training program for the hospital's pediatricians, house officers and residents. Much of this is done in the out-patient division while other training of residents goes on in the various ward settings on both the medical and surgical units as informal, case-oriented bedside instruction. In addition, the Psychiatrist-in-Chief meets with the medical residents each Friday morning to discuss cases that seem to the pediatrician to have paramount or associated psychological problems. In these sessions the pediatricians present their own cases to the psychiatrist and he, together with two members of his staff, and a clinical psychologist, discusses the meanings of the symptoms, the treatment and disposition of the case in question.

The primary aim of this seminar is the instruction of pediatric residents relative to those cases which will appear frequently in their future hospital or private practice, with the hope that they themselves can handle these cases without referral to the child psychiatrist, thus becoming an effective additional mental health arm in the community.

Clinical Psychology

The training of psychologists and the training done by psychologists, during the period of this report, have occurred in many different areas of the Medical Center and at several levels of training.

As of this past September, the Psychology Unit Chief of MOPD has implemented a plan in which he provides on-the-spot consultation for pediatricians with reference to diagnostic testing, and demonstrates, with the patient, screening testing techniques for subsequent use by the pediatrician. Two of our researchers in the area of tasks of emotional development in children have conducted seminars for school personnel on this particular diagnostic technique.

In-service training for staff psychologists has been an ongoing process. Beyond the teaching provided for all disciplines in the Department by way of regularly scheduled teaching and progress conferences, staff meetings, and evening scientific meetings, have been the special teaching exercises for staff psychologists. These have been accomplished primarily by regularly scheduled staff and supervisors' meetings.

Within the Department proper, psychologists have sponsored seminars on the theory, meanings, and use, of psychological tests for psychiatric residents, pediatric/psychiatric fellows, and for student psychiatric social workers.

Training programs for students in psychology have been a major function of staff psychologists, with allied professional personnel participating extensively. These programs have been implemented at undergraduate, doctoral, and, in conjunction with the Judge Baker Guidance Center, post doctoral levels.

At the undergraduate level, a young woman student in psychology from Bennington College has spent two consecutive two-month periods with us. Her program, as outlined by us, included periods of supervised observation in many areas of the hospital and some minimal participation with patients. A young woman from Colby College will come here during the current training year under a similar arrangement.

At the pre-internship level we have trained, each year, three to five candidates for doctorates in clinical psychology from the Department of Social Relations at Harvard University. These students spend the equivalent of half a day a week with us, as a supplement to a seminar on psychotherapy with children (taught by Dr. Gardner) ; and they are individually supervised by senior staff psychologists on their work with two child therapy patients. Through a special arrangement with the Harvard School of Edu-

cation, one candidate for a doctorate in school psychology has been with us each year where he is supervised on his therapeutic work with children seen in a school setting.

The training program for pre-doctoral interns in psychology, in operation for many years, has received a major emphasis. The program, approved by the American Psychological Association and, for stipend support, by the United States Public Health Service, includes intensive experience in psychological testing of children; an introduction to psychotherapy and counseling with both children and their parents; and a survey of research findings and some exploration of research techniques. For the 1962-63 training year, there were five interns, for 1963-64, six, and for the training year beginning in September, 1964, there were five. They have come from a range of universities, all of whose programs have been approved by the American Psychological Association.

Since 1962, a training program for post-doctoral students in clinical psychology has been conducted jointly with the Judge Baker Guidance Center. This program, one of the relatively few at the post-doctoral level approved and partially supported by the United States Public Health Service, is intended, by USPH definition, for unusually superior candidates. In content, it can supplement, in part, the pre-doctoral internship; however, the post-doctoral intern is given considerable latitude for specialization in particular areas of interest, whether it be in research, diagnostic evaluation, psychotherapy, residential treatment, etc. In addition to intensive individual and group supervision and attendance at the several departmental weekly teaching exercises, seminars, especially designed for this level of student, are held weekly. For the 1962-63 training year, there were two post-doctoral interns, for 1963-64, there were five, and for the training year which began in September, 1964, there were again five.

Finally, we note the rich training opportunities the Medical Center offered for those trainees in psychology interested in working with children. The increasing number of children referred here for evaluation through psychological tests by schools, family doctors, and pediatricians, was very apparent during this period. School psychologists, for example, have called on us where a pupil presented special diagnostic problems. While the increase in testing referrals over the years has presented problems in terms of service demands, it has provided enriched training opportunities for trainees in psychology.

Psychiatric Social Work

The Division of Psychiatric Social Work has close contact with activities going on in the Psychiatry Clinic and participates also in programs for medical social workers since we are certainly interested in how we can contribute to the comprehensive medical care of all children coming to The Children's Hospital Medical Center. However, we operate principally in terms of service to clients, although some of the patients may very well be known to some of the other services.

Teaching and Training in Psychiatry

Training of four social work students from two schools of social work has been carried on and at the request of Miss Maginnis we offered in the year 1964-1965 an opportunity to two second year students and their supervisors on the medical services to participate in some of our supervisory programs. Because there usually is some turnover in the supervisory staff, we conduct seminars twice a month on principles of supervision.

It has always been a practice at the Hospital that all workers have supervision, and of a more structured nature in the early years of the working experience. As a matter of fact, NASW standards now require that beginning social workers who wish to be certified must have two years of in-service supervision by a duly qualified social worker. We continue supervision here with some of our more senior people, although it is carried out more on a consultation basis. This contributes toward the improvement of skills; it sharpens critical examination of one's own work, and it contributes to an improved quality of performance in service to the individual clients.

Twice a month during the social work students' training period we meet on a rather formal basis. In the first half-year we study the symptom groups frequently dealt with in our clinic, and during the second half year we devote our attention to certain issues of case work treatment itself. In the course of time we have

covered a wide range of symptom groups including many of the psychosomatic disorders, learning problems, school phobias, tics, enuresis, delinquency, etc.

Training of Other Disciplines

Obviously in a training center in which some of the work with children is carried by trainees but most of the work with parents by staff social workers, the need for and value of informal teaching and training are evident. On a formal basis we are involved in the following educational functions:

1. Seminars for predoctoral Psychology interns

These are group supervisory sessions in which there are three or four psychologist trainees. The supervision relates to cases in which they are treating parents and hence are functioning as do the social workers in the Department.

We offer a similar program for postdoctoral candidates in clinical psychology.

2. Pediatric-Psychiatric trainees

Since this program was initiated in 1962, each pediatric-psychiatric resident has carried at least two parents in intensive treatment and in addition they have contacts with other parents in the clinic. In the year 1964-65 these physicians have received one hour of individual supervision by a caseworker.

In addition to this, arrangements were made whereby pediatricians have the opportunity to visit a large variety of social agencies in the Boston community which conduct a number of differing child care services.

3. Activity in collaboration with Medical Social Service Department

The psychiatric social workers work closely with the medical and surgical workers and we have tried to find increasing numbers of ways to share knowledge in order to improve the professional services of members of both groups.

Specifically the chief psychiatric social worker meets with Miss Maginnis and a group of her supervisors in a committee called the "Staff Development Committee." Matters concerning the all-over functioning of the Social Service Department are discussed, clarified and implemented.

Each of the social workers in the Psychiatry Department work on at least one of three important committees, education, program or personnel practices.

Clinical Conferences with Social Workers

For several years the Department of Psychiatry has conducted twice monthly clinical case conferences with members of the department of social work of The Children's Hospital Medical Center, under the chairmanship of Dr. Tully Benaron. They are attended by staff social workers and social work students representing almost every service and clinic in the hospital complex.

The primary aim of these clinical conferences is education and training, although secondary goals such as consultative functions regarding specific problems are also achieved. Clinical case material derived from the various services is presented by the social workers. A few of the subjects discussed in the conferences have been:

The chronically ill child, e.g. — nephrosis, arthritis
The orthopedic patient in prolonged restraint
Congenital defects
The brain-injured child
The epileptic child
The dying patient and his family
The battered child syndrome

III. Education

Many of the teaching activities carried out by the members of the Department of Psychiatry are aimed at the pre-professional educational level of students rather than at trainees at the post-graduating level in the various disciplines.

Harvard Medical Students

Students of the various class levels at the Medical School receive instruction in the principles of child personality development and the childhood emotional disabilities at the hospital. Lectures are given to the first year students in the required course in Growth and Development, lectures in clinical child psychiatry are given the third year group, and clinical case presentations are made for the fourth year students within the Children's Hospital. In addition, students in their final year at the Medical School held seminars on problems in adolescence with Dr. Gardner at the Massachusetts Mental Health Center. With the establishment of the new curriculum in the fall of 1964, six members of the department held case presentations and discussions with third year students in the Introduction to the Clinic course, and weekly

discussions on the medical divisions of the hospital have been held with both the third and fourth year students in the Principal Clinical Year structure of the latter group. Finally, in certain months, fourth year Harvard Medical students have taken a month's diversified program designed to give an extensive and intensive introduction to the principles and practices of Child Psychiatry in a pediatric setting.

Psychology Clinical Clerkships

An introductory educational experience to clinical psychologists in their third year of post graduate training in the Department of Social Relations of Harvard College is also given. These students actively participate in the treatment of cases under the direct supervision of four members of our Division of Psychology, and also receive instruction in the weekly teaching and progress conferences that are being carried out relative to all cases being treated by staff members in the department.

Nurses

Both undergraduate and graduate nurses, have participated in a series of clinically oriented seminars to acquaint them with the principles of child development and the importance of emotional accomplishments to physical disease and handicaps. In addition to this, every opportunity is seized to enlarge and enrich the sophistication of nurses along these very same lines. The value of this instruction is proven by the fact that frequently our nurses are the first of the various professional persons on the wards to note that a child is handicapped by a transient emotional upset or possibly is suffering from some serious personality disorder. These observations on the part of the nurse motivate her to give a better and perhaps more particularized type of care to an individual patient, and also alerts the pediatrician and the psychiatrist to the need for salutory intervention in its early stages of inception.

Staff Physiotherapists

Staff physiotherapists and also students in physiotherapy have been given case-oriented lectures and discussions in which emphasis is placed upon the modification of, or blocks to, the personality development of the child associated with grave physical disabilities and motoric restrictions. The members of the Orthopedic Department of the Hospital seem desirous of offering a program of comprehensive care and rehabilitation of their patients, and this emphasis on psychological factors is of considerable importance in effecting these goals.

University Instruction

In addition to the above, considerable didactic instruction is given in systematic academic courses in nearby colleges and universities. For example: the psychiatrist-in-chief offers one full-year course and two half-year courses to undergraduate and graduate students in the Social Relations Department in Harvard Univerity and Radcliffe College. These courses deal with the psychological and social aspects of the practice of medicine, the emotional problems of childhood and adolescence, and the meaning, diagnosis and treatment of emotional disorder.

Three of our staff clinical psychologists are supervisors in the clinical clerkship course in the Department of Social Relations at Harvard; Miss Ethel Walsh, of our Division of Psychiatric Social Work is an Associate Professor at the Simmons College Schools of Social Work; and three of her colleagues are supervisors of social work students from the Boston College, Boston University and Simmons College Schools of Social Work.

Finally, one of our staff members is a faculty member of the Harvard Graduate School of Education and gives instruction to those educators whose professions later will be that of school psychologist or school counselor.

IV. Research

Smiling and Crying

1. Dr. Peter Wolff is the Director of Research in the Department of Psychiatry. A report of his work follows, together with a summarization of the research work carried out or in progress by the other research workers.

"Several studies in progress during the previous reporting period have been completed: systematic observation and film sequences on the development of smiling and of stereotypic movements in children with Down's syndrome have been collected, and the data are being prepared for publication. This investigation was intended both as a comparative study on the

ontogeny of smiling (to parallel studies of smiling in normal children) and as a detailed description of automatisms in a homogeneous population; the latter is part of a larger study on the structure and function of stereotypic behavior on the forms it takes in different pathological populations, and on the significance of such movements in the total adaptation of the organism.

"A mass survey of the choreiform syndrome (and by inference of the incidence of minimal brain damage) has been completed. The populations studied include normal school children, delinquents, and psychotic children in the U.S., as well as normal school children and delinquents in Japan; the results indicate that the incidence of the choreiform syndrome in Japan coincides precisely with that observed in comparable populations in the U.S., and that it is significantly greater in deviant populations than in normal school children.

"A detailed study of sucking patterns in normal and organically damaged infants has been completed, and the results are being prepared for publication. The purpose of this study was three-fold: (1) to assess the possible diagnostic significance of a "sucking test" for the neurological examination of the young infant; (2) to study the rhythmicity of automatisms in humans which have been explored in other species, by comparative zoologists; (3) to devise an admittedly crude method for studying genetic influences on behavior by comparing the sucking patterns of infants with known chromosomal lesions to sucking patterns of normal infants. In all three respects the technique has shown promise; at present simultaneous EEG recordings are being introduced to correlate the pattern and rhythms of sucking (frequency, total amount per unit time, amplitude and the like), with the state of the organism.

"The study of arousal and sucking patterns in infants with tracheo-esophageal fistulas has been abandoned temporarily because of technical difficulties encountered, although the results were suggestive."

The core of Dr. Wolff's interest remains the longitudinal study of normal infants in the natural environment of their homes. Observation of infants to the end of the third month have been completed; and the first studies from birth to the end of the sixth month are now in progress. Several publications from the three months' longitudinal studies have been prepared, while the general collation of data for an integrated presentation of development in the first three months is still under way.

In the winter of 1963 Dr. Wolff visited Japan for four months to do comparative studies in the homes of four young Japanese infants. These studies were *not* intended as attempts to define cross-cultural differences per se, but to use cross-cultural differences as experiments in nature. As such they proved to be of great value in highlighting some determinants of development that would have escaped attention in a non-comparative approach. Dr. Wolff hopes to expand these comparisons and has initiated a cooperative effort with the Department of Psychiatry at Kobe Medical College, to this end.

In the summer of 1964, Mr. Michael Simmons, a Harvard medical student, and Dr. Wolff, working with neonates, studied the effects of pacifier sucking on thresholds to external stimulation, which clearly demonstrated a rise in threshold during those periods of sleep when the infant is sucking as contrasted with after periods of sleep.

On the assumption that the cries of newborn infants are specific manifestations of distress, which correspond within limits to the different efficient causes of crying in the infant; that the differentiation of cry pattern into more discreet non-verbal communications follows a lawful sequence; and that there may be a structure-functional relation between crying and early babbling, Mr. Donald Cohen, a Yale medical student, and Dr. Wolff have collected samples of crying in response to various "causes" such as hunger, colic, physical pain, etc., which are now being analyzed by spectrographic methods. From the preliminary data they hope to isolate the significant physical parameters (pitch pattern, temporal organization, and the like) and to apply these to the analysis of systematically collected samples of crying. Dr. Wolff is also collecting specimens of crying over the first six months, to trace the ontogeny of crying patterns, and to identify possible connections between crying and early non-crying vocalizations.

Speech Research

Dr. Eric H. Lenneberg has established and directed a laboratory for speech research under grants from the National Institutes of Mental Health and Neurological Disease and Blindness.

The purpose has been to allow an entirely academic approach to problems pertaining to man's outstanding behavioral characteristic: speech. Specific research projects have fallen roughly into two categories: the physiology of speech and the development of speech. Longitudinal studies have been undertaken in the development of speech in infants (both normal and those born to congenitally deaf parents), as well as in a large sample of mongoloid children. Adult and pediatric patients with disease of the central and peripheral nervous systems affecting speech have been studied individually.

In an effort to gain understanding of human behavior (specifically language, motor coordination cognitive processes), these initial studies have concentrated on speech and language because many of the problems encountered are identical with problems of the biology of behavior in general. Thus, the work on language has served as a "test case" for behavioral theory, and the laboratory has become a proving ground for what has come to be known as *psychobiology*.

As part of the research during the present year (winter of 1964-65) Dr. Lenneberg is on a leave of absence to finish work on a book, "The Biological Bases of Language."

Emotional Development

Drs. Haskell Cohen and Geraldine Rickard will have completed the first major phase of a normative study of the emotional development of children of latency age. This research has continued for six years, made possible in its pilot stages by grants from the Wolbach Fund and the Hood Foundation, and subsequently through support for the past three years from the National Association for Mental Health. They have had two goals: the development of normative data on the emotional development of children; and the construction of a test which would lend itself to the collection of data which could be objectified so that children could be compared with one another.

Their development of the Tasks of Emotional Development Test as an instrument to provide normative data is based on the concept that the ability to function as a contributing, mature adult in a democratic society presupposes that children, in the process of growing up, will have solved, at least at a minimal level, certain "emotional developmental tasks."

One can view the personality development of children (Gardner, Erikson) by assuming that personality development takes place through the mastery of a series of tasks of emotional development and that certain of these tasks are more closely related to one of the three age-level periods, categorized as pre-school, latency (age 6 to 11), and adolescence.

If a child has not been successful in mastering any given task of emotional development, there will be possible impairment in solving other tasks that come developmentally at the same age as well as impairment of tasks that come at a later age.

The utilization of the developmental-task approach is one way to evaluate the emotional health of a child.

Anorexia-Nervosa

During the past two years Dr. John Blitzer and Dr. Nancy Rollins, together with Dr. Amelia Blackwell, have carried out intensive research studies on anorexia-nervosa in children. These researchers have already published a summarization on 12 cases suffering from this very serious emotional disorder of children and adolescents, and at the present time Dr. Rollins and Dr. Blackwell are carrying out follow-up studies on children who formerly were patients at the hospital and were discharged well in the years immediately past. It is expected that this latter study will throw considerable light not only upon the efficacy of treatments received while these patients were acutely ill, but it will also illuminate the adjustment and the mental health status of patients who suffered from this condition in childhood.

"Battered Children"

Dr. Richard Galdston has been studying cases of young children admitted because of physical illness due to parental abuse, i.e. the "Battered Child." This study has been done in association with hospital administration and social service personnel and is now ready for publication.

Psychiatric consultation afforded the opportunity to observe the responses of these children and to study the psychodynamics of their abusing parents. Interest in this syndrome stemmed out of an earlier study of young children who displayed a failure to thrive in the absence of any demonstrable organic disease. Certain of these cases were subsequently admitted because of physical abuse.

The approach to this syndrome is as but one of several disorders of the function of parenthood. *Physical abuse* should be distinguished from *parental neglect*. Many of the abused children are well-fed and cared for, and it is striking to see a young child covered with welts and bruises dressed in a well-starched pinafore. Similarly these cases should be distinguished from those of *deliberate punishment* which occur in older children whose verbal and motor development afford a potential for the provocation of parental ire and retaliation.

These abused children ranged in age from 3 months to 3½ years, with the largest group between 6 and 18 months. None of them had sufficient verbal or motor skills to be considered capable of realistically provocative behavior; to know the nature of their thoughts and acts.

An average of 12 patients per year has been so diagnosed, but doubtless, this is a minimum figure. Once considered, the diagnosis is relatively readily established. There are few other diseases that produce the clinical picture of fresh and old bruises with new and healed fractures. Bleeding disorders and disorders of bone metabolism can be easily ruled out. Furthermore, such disease processes are seldom associated with the marked decrease in appetitive behavior which the abused child usually displays.

There is no particular ethnic, social or economic distribution to the case material of this study. In general the parents interviewed were young and of limited financial means and education. In only a few instances did gross poverty or ignorance appear, and in a few cases the parents were of upper middle-class background.

A major reversal in the traditional roles of the parents was a significant feature. Many of the fathers were unemployed or worked part-time, often alternating with their wives who also worked. The wife cared for the child part of the time, and worked the rest, relegating the care of the child to the husband or a baby-sitter. In appearance and demeanor many of these women were quite masculine and their husbands correspondingly passive and retiring.

In summary, the syndrome can be understood as the result of a gross but circumscribed distortion in the parents' perception of a particular child at a particular stage in its development. Management of these cases requires early and active intervention with emphasis upon the parents' misperception of the child.

Growth Failure in Maternal Deprivation

This project is a study of growth failure in children, commonly known as the failure to thrive syndrome, a disorder of multiple etiology defined by marked growth retardation of height and weight. From this broad group we have chosen for study those children whose growth retardation and failure to thrive is associated with maternal deprivation and disturbance in the mother-child relationship.

The purpose of our study is to determine what sequellae — physical, emotional, and social — follow the acute phase of this disorder; to determine what association exists between these sequellae, external family stress, and maternal characteristics at the time of hospitalization; and, to relate these sequellae to the child's environment and his experience after hospitalization.

Our goal is to identify gaps in the current management of this disorder and to provide more stringent criteria for the treatment and management of the cases.

We are currently studying 28 families, each with one or more children who have been hospitalized with a diagnosis of failure to thrive.

This study is being conducted in the Child Development Clinic of the Child Health Division by Dr. Helen H. Glaser, Senior Associate in Medicine and Child Health, and Dr. Dexter M. Bullard, Jr., Assistant in Psychiatry.

Sex-Chromosome Aberration

As an outgrowth of pilot studies on the psychological function of children with chromosomal abnormalities, Dr. Stanley Walzer is now engaged in a full-time project to investigate the sex-specific behavioral differences of infants who have been identified by mass survey as suffering from a sex-chromosome aberration. This work is carried out under joint sponsorship with Dr. Parke Gerald and Dr. Wolff.

Urinary Defects — Epilepsy

Dr. Abraham Fineman has carried out intensive analytic studies of two clinical conditions during the past two years and has published his results in each of these fields. His first study related to cases of congenital urinary anatomical defects; and the second dealt with the effectiveness of psychoanalytic techniques in the treatment of children with epilepsy.

Although this type of research is meticulous and time-consuming, the value of the single case method in psychoanalysis demonstrated its great worth in reference to the added meanings and insights that accrue. It is of inestimable value in the day by day endeavors of child psychiatrists dealing less intensively with emotionally disabled children. We hope Dr. Fineman will continue these research studies in the years ahead, concentrating upon other psychosomatic clinical syndromes.

Endocrine Disorders

For the past six years Dr. Krims has been engaged in a collaborative project with the Endocrine Clinic of the Hospital, studying a wide variety of endocrine disorders. The study takes the form of an attempt to clarify the psychological impact on the child and his family of his illness. Although other illnesses have been studied, precocious puberty and dwarfism have been especially highlighted in this project.

Attempts to delineate the traumatic effects on the psychological apparatus have been coupled with attempts to mitigate these effects as part of the total care of the child.

Heart Disease

Dr. Annette Silbert with Dr. Peter Wolff has recently begun a follow-up study on children with congenital heart disease, which will attempt to assess the shift in intellectual function before, immediately after, and six months after surgery to correct the cardiac defect. Aside from its immediate implications for the population of children to be studied, this investigation may yield a sensitive instrument for measuring organismic influences like chronic hypoxia on complex psychological processes, such as cognitive functions and perceptual-motor skills.

Elsewhere, Dr. Mehlman is conducting a clinical investigation of Psychiatric Aspects of allpecia areata and totalis in conjunction with the Department of Dermatology.

If one adds to the above those research projects in progress within the Hospital's affiliate, the Judge Baker Guidance Center, one notes that investigations going on within this total child psychiatry structure comprise a very wide spectrum of childhood emotional development and behavioral disabilities.

V. Future

Marked changes in basic goals and procedures in mental health work in this country are being discussed at federal, state and local levels. Following the late President Kennedy's message to Congress in 1963, and the passage of the Mental Health Act based thereon later that year, psychiatrists and all medical and nonmedical professional groups have dedicated themselves to bringing the widest spectrum of mental health care facilities to all of the people of this nation. The proposed instrument for affecting this goal is the creation of comprehensive mental health community centers in determined-upon population areas within the several states. During the past year over 35,000 people have been engaged as members of various mental health planning committees in all of our 50 states working to evolve the structure and function of these mental health centers.

The community mental health center is not merely (nor even primarily) a large centralized monolithic brick-and-mortar structure wherein all needed mental health services to both adults and children will be available; but rather a mental health center is a structure of diagnostic, treatment and rehabilitation *programs* in a given population area that will be comprehensive enough — and coordinated enough — to fulfil these needs. A good example of the beginning structuralization of such a center is our own Massachusetts Mental Health Center (formerly the Boston Psychopathic Hospital) from which the Children's Hospital-Judge Baker psychiatry department derives its Harvard Medical School status and its accreditation by the American Board of Psychiatry and Neurology. Here one notes the present establishment — and the projected units — of the desired community mental health center. Possibly 12 other such centers are to be established in the Commonwealth.

In the light of this local and national planning it seems that one of our primary problems in the immediate future is that of the most propitious role the privately endowed Children's Hospital-Judge Baker child psychiatry unit can and should play within this larger context of total mental health care.

Decisions as to what a child psychiatry department which is a part of a medical school teaching hospital should assume as its primary functions is of increasing importance. Tradi-

tionally, the functions of education, training and research have been paramount, but these in turn always have been associated with and based upon the highest level of excellence in medical service. Presumably in all of the divisions of the Harvard Medical School Department of Psychiatry it will be the consensus that there will be an adherence to — and emphasis upon — these functions. Yet beyond these it is still our presenting and pressuring problem to determine the imperative item of the most effective and meaningful *coordination* of these efforts with the overall efforts and programs of our emerging mental health centers. To these problems we have given our attention already, and shall in the months ahead.

If one may turn to our more specific, immediate needs and hopes, we would list them as follows:

1. The great need for space for our outpatient building that is now being built. It is hoped that we will be in this building in two years, occupying the two floors assigned for our use.

2. The need for a relatively small in-patient psychiatric service for children (a need that I have emphasized in my previous reports) will also be met in a new building to be erected in the years immediately ahead.

3. For a number of years I have emphasized the need for a systematized pattern of service for the diagnosis and care of the mentally deficient child and for *coordinated* programs of research relating to this developmental disability of multiple and varied etiology. I have been concerned particularly by the lack of emphasis upon this clinical condition in our training programs for career child psychiatrists and residents in other disciplines. As is well known, we have high hopes — and realistic expectations — that through the combined financial resources of the United States Public Health Service and of our own Corporation the facilities to do all of these things will be established in the near future in the form of new out-patient diagnostic and treatment facilities and new (and comprehensive) research facilities specifically designed for service and investigation in respect to the mentally deficient child.

4. It has been apparent to me for some time that there is a need for a psychiatric "walk-in" clinic to care for those children who need emergency care because of suddenly appearing psychopathological behavior, or suicidal acts, gestures or threats. This clinic, possibly physically part of the out-patient area, should be manned on a 24-hour basis by on-call child psychiatrists who would, of course, work in close association with the physicians and surgeons on the present emergency service.

5. The need for additional psychiatric (and other mental health) personnel is a pressing and vital one. It is particularly pertinent in respect to high-level positions in the Department, i.e. at the Associate-Professor level and above. The main problem is the lack of enough money to pay physicians who would and should dedicate themselves to a fulltime hospital and academic career if the gap between possible hospital salaries and private practice income could be closed to a realistic degree.

6. To a certain degree our hopes in respect to expanded research programs with fulltime research personnel are tempered by the same lack of available resources. To be sure the competent research worker today can, to a large degree, acquire a considerable portion of his support from extramural foundations and governmental agencies. Nonetheless, his basic security must be established by monies in escrow that insures the investigator of continued support independent of the policy vagaries, the altered emphases, or the drastic curtailments that may arise in research grantor institutions or agencies.

It is our intention to continue to expand our research efforts in respect to child development and in respect to childhood personality developmental arrests or disabilities under the leadership of Dr. Peter Wolff, our Research Director. It is the continuing investigation of the critical relationship between childhood development and childhood disabilities that constitutes our primary focus and emphasis.

In concluding this report I wish to thank all of the members of the Department of Psychiatry for their all-important day by day efforts to care for the mentally ill or the behaviorally

maladjusted children who, with their parents, come to the Children's Hospital Medical Center for help. Some of these Department members are named in the body of my report. Others are not designated in respect to specific functions. But I extend my thanks equally "to the named — and to the unnamed."

George E. Gardner, Ph.D., M.D.
Psychiatrist-in-Chief

Following is a list of descriptive categories of problems of patients in treatment in the Psychiatry Clinic.

Bodily reactions to stress *(epilepsy, asthma, colitis, skin disorders, etc.)*

Problems in school learning

Behavior disorders *(tantrums, rages, hyperactivity, impulsive, delinquent behavior, etc.)*

Habit disturbance *(enuresis, soiling, hair pulling, etc.)*

Disorder in interpersonal relations *(with parents, peers, isolation, etc.)*

Anxiety *(separation anxiety, unspecified anxiety, etc.)*

Phobia *(general, school, etc.)*

Psychological disorders *(as reaction to illness, injury, surgery—congenital heart disease — cerebral palsy, polio, T & A, etc.)*

Eating disorders *(anorexia, anorexia nervosa, obesity)*

Speech disorders *(stuttering, etc.)*

Borderline psychosis

Depression *(non-psychotic)* grief

Obsessive compulsive disorders *(obsessive thinking, compulsive behavior, including tics, etc.)*

Hysteria *(conversion hysteria, hysterical personality, etc.)*

Psychosis *(childhood)*

Schizophrenia

	1963	*1964*
TREATMENT VISITS	8360	9138
DIAGNOSTIC EVALUATIONS		
MEDICAL SERVICE:		
Medical Morning Clinic	1078	1330
Seizure Unit	52	65
Endocrine Clinic	14	22
ADOLESCENTS' UNIT	83	62
INPATIENT DIVISION	165	305
PSYCHOLOGICAL EVALUATIONS		
Medical OPD	659	680
Adolescents' Unit	123	154
Patients in treatment in Psych. Clinic	110	95
Children's Mission or other affiliates	10	15
INPATIENT DIVISIONS	290	329
OUTPATIENTS OF PRIVATE PHYSICIANS	123	106
PATIENTS IN INTENSIVE TREATMENT IN DEPARTMENT OF PSYCHIATRY	233	240
Number of patients referred to Psychiatry Clinic for the above services	1638	1687

With increasing complexity and sophistication of radiological examination, the Department has been engaged in almost Sisyphean efforts to stay abreast of the rapidly increasing work load. Since the last report was written, two years ago, there has been a 20 percent increase in the diagnostic examinations carried out and the number of films taken has increased from 86,000 in 1962 to 111,000 this past year. From what was a rather small department only a few years ago, we have now increased to a staff of 45, including six fulltime physicians and five residents.

In 1963, Dr. N. Thorne Griscom came from the Massachusetts General Hospital to join the staff as Assistant Radiologist, and in 1964, Dr. Michael Gyepes, who had received his radiological training at Long Island College Hospital and here at the Children's Hospital, became Assistant Radiologist. After a long and productive service as Radiotherapist, Dr. Giulio D'Angio left to assume the very important post of Professor of Radiotherapy at the University of Minnesota. To fill this vacancy, Dr. Melvin Tefft was appointed Radiotherapist to the Children's Hospital Medical Center and to the Children's Cancer Research Foundation. In addition to his duties as Radiotherapist, Dr. Tefft has initiated a very active program in the diagnostic use of radioisotopes.

Under the leadership of Miss Ann Miles, Chief Radiographer, and with the assistance of Miss Gray and Miss Godderidge, the student technician training program has been expanded so that students are now received from the Maine Medical Center in Portland, as well as from the Peter Bent Brigham Hospital, and the Saint John General Hospital in New Brunswick.

The residency training program, with its affiliations with the Mary Fletcher Hospital group in Burlington, Vt., the Peter Bent Brigham Hospital, and other Boston institutions, has not altered appreciably.

The most notable improvement in the facilities of the Department was carried out a year ago with the generous support of the Hartford Foundation. The x-ray equipment in the Cardiac Catheterization Room was replaced by a more satisfactory table, improved image amplification system with both cine and video, and, in addition, an Elema-Schonander bi-plane roll film changer was installed capable of taking up to 12 films in each of two planes every second. This room is now functioning to capacity and at least two complete catheterization studies with cine and biplane angiography are carried out each day. Two other rooms of the Department have been modernized so that we now have three image amplification systems, each with adaptation for moving pictures, and very soon television with video tape recording will be available to us. Each of these installations was accomplished efficiently and expeditiously by Mr. Eric Hammond and his associate, Mr. Charles Spear, thus affecting a very considerable saving in installation cost and with an electromechanical arrangement more suitable to the needs of the Children's Hospital.

Research

The major research interests of the Department have been the continuing study of the physiology and pathophysiology of the respiratory tract. This already has led to several papers and an award winning exhibit on the physiology and anatomy of the eustachian tube, for the first time satisfactorily delineated by roentgen methods. These studies continue in cooperation with members of the Respiratory Therapy Unit and more recently the Psycho-acoustical Laboratory of Harvard University. All of these studies have found important clinical application.

Other interests have included studies on total body opacification, first presented before the American Roentgen Ray Society in Montreal, and which later won another award as an exhibit. Studies in hypovolemia, initially presented in Paris, including that produced by ingeston of hyperosmolar radiopaques and study of the roentgenographic criteria for the recognition of hypovolemia from plain film studies continue, as do studies on the effect of repetitive trauma to the physeal-metaphyseal plates, the growth and development of the facial structures and, in cooperation with the Department of Radiology at the Boston Lying-in Hospital, studies on pulmonary patterns in neonates. The Division of Radiotherapy has continued its cooperative research efforts with the Children's Cancer Research Foundation with a number of very important ongoing studies.

Members of the staff have been busy, as in previous years, with the presentation of talks, papers and exhibits at local, national and international meetings. The initial success of the newly formed European Society for Pediatric Radiology was due in large measure to the efforts of graduates of this Department and the Radiologist-in-Chief has been named as a "Membre Fondateur". This Society has given new impetus to the whole field of Pediatric Radiology and its first two meetings have met with tremendous enthusiasm. One of the most enjoyable weeks of the past year was spent serving as Visiting Professor of Radiology at McGill University in Montreal.

We report on two busy years, hopefully productive, occasionally frustrating, but hardly static.

Edward B. D. Neuhauser, M.D.
Radiologist-in-Chief

RADIOLOGY
House Staff

Chief Residents

Herbert D. Weintraub
James A. Danigelis
Michael T. Gyepes
Tugrul Pirnar
Robert S. Frech

Resident

James A. Danigelis
Larry W. Seibert
Edward A. Kupic
Duree Eaton
C. Deem Schoenfeld

Assistant Resident

E. James Potchen
David C. Gleason
Ronald Messer
Charles A. Gooding
Peter K. Spiegel
Naim Atallah

Fellow in Radiology

C. Stuart Houston
Heriberto Pagan-Saez

Cardiovascular Resident

William Sheehan

Affiliating Resident

Duree Eaton

SUMMARY FOR THE DEPARMENT OF RADIOLOGY
YEAR ENDING 9/30/64

Month	*Films*	*Old Cases Diag.*	*New Cases Diag.*	*Treatments*
October	9,246	2,172	1,030	213
November	8,608	2,026	885	200
December	8,605	2,011	856	266
January	9,303	2,146	976	320
February	8,422	1,969	861	221
March	10,218	2,142	956	306
April	9,440	2,080	1,018	264
May	9,987	2,195	1,109	193
June	9,863	2,186	988	227
July	9,925	2,158	969	291
August	8,486	1,958	900	236
September	9,456	2,073	884	171
Totals	111,559	25,116	11,432	2,908

Radiology

Year	*Films*	*Diagnostic Cases*	*Treatments*
1964	111,559	36,548	2,908
1963	91,346	32,194	4,118
1962	86,339	30,237	3,049
1961	81,378	28,526	2,728
1960	78,248	28,185	3,294
1959	74,453	27,095	3,546
1958	70,693	25,337	3,676
1957	71,511	25,123	3,405
1956	65,317	23,000	2,419
1955	58,532	20,233	2,191

The general Surgical Service of this hospital is an extremely active unit, dealing with widely diversified problems. We handle many conditions, therapy for which is well standardized and free of risk, but concurrently we face life-and-death struggles in management of a number of baffling problems which are presented to us by infants and children. No attempt is made herewith to summarize all of our various activities; I will merely comment on a few points which might be of interest to the many friends of the hospital and to doctors who have faithfully sent their patients here for surgical care.

First of all, we must express deep appreciation to the Trustees and Administrative Officers of the institution for the excellent facilities and out-standing support that they have given in every way. During current times, when financial deficits have been high and ominous, they have avoided the temptation of restricting services in the institution; instead, they have constantly improved many of these structures and have introduced several new personnel policies which provide a better place to work in and a more stable environment, thus contributing to the improvement of patient-care. To provide this kind of imaginative and active backing, and yet at the same time to reduce somewhat the annual deficit, certainly calls for the hearty thanks of all of us in the hospital.

In these times, when across the country there is notable shortage of nursing help, and so widely there is repeated turnover of nursing staffs, it assumes a high place among our assets at the Children's Hospital Medical Center to have a Department of Nursing which continues to provide general and special nursing care of an extremely high order. Nowhere is this valuable assistance more manifest than on the Surgical Service, where so many times not only the comfort, but the very life of a patient depends upon the nursing personnel. In the handling of our cases, a large part of the success which we have been able to attain has been directly attributable to the untiring efforts of our nurses. We are constantly grateful for the magnificent way in which they continue to take on their share of patients' burdens.

It is fortunate that the institution has been able to attract and maintain a superb house staff over a long span of years. These twelve men are of consistently high quality and have played a most important role in the ability of the hospital to extend courteous, efficient, and life-saving services to the large number of patients who are cared for in the out-patient department and by the in-patient area. These men come to us for periods varying from one to several years for a formal segment of their surgical training, but it is continually obvious that they give more than they take. They are a picked lot, having attained high records in medical schools, and all of them have had considerable background on general surgical services of other hospitals in the Greater Boston area, or from other communities around the country. They have a fresh point of view, and an alertness of interest in the problems before them. On innumerable occasions, they have made suggestions for changes in certain technical details of operative procedures or of postoperative management which have become accepted, and now form a standard part of our therapeutic regimes. A study and enumeration of all the contributions made by these young men over the years would add up to a very impressive list.

Patient Load

Patient-loads on the general Surgical Service can be broken down roughly into three categories: First, there are those who have conditions, the surgical management of which has long been standardized and which has a risk which is virtually nil and which is rarely attended by serious postoperative complications. An example of this would be an inguinal hernia; how common this is can be judged by the fact that over the years some 13,000 children and babies have been operated on here. We regard these reparative procedures as quite routine; they seldom cause any anxiety or difficulty. Another example, would be appendicitis, either in a simple or ruptured form. There was a time when this was a dreaded disease, posing a real threat to the life of a youngster, and not infrequently being followed by some serious complication. In spite of the fact that still about one-half of the children who come to us with appendicitis have gone on to rupture and peritonitis before they get to the hospital, it has been possible to handle this condition with an exceedingly satisfactory record; the last death in our series was in 1944.

Second, there are those diseases which have challenged the surgeon because of the severity or complexity of the lesion, and which we have

been working on and thinking about in the hope of rolling back the threats, so that there might be improvement in our mortality and morbidity statistics. An example would be intussusception, a telescoping of one segment of intestine into a subjacent portion of the bowel, producing a marked degree of obstruction and carrying a high risk of fatality if not relieved within twenty-four or forty-eight hours. This is a well recognized and common entity in babies in the first year or two of life. Dr. Ladd and his staff contributed tremendously to the care of this desperate malady. When he first started to work here after the first World War, the mortality rate was nearly 60 per cent. By 1930, he had reduced this to about 15 per cent, and by 1940 it was down to 4 per cent. A review of our statistics in the last 10 years shows that 226 of these babies have come to operation, with only one fatality (which was in 1958).

Third, we often encounter new conditions for which we are in the early, explorative phases of developing new techniques. Here we are working in virgin territory, wherein there are many new and unforseen obstacles, but in which we are beginning to see some light by bringing to bear studies in the form of clinical investigation or experimental observations from the animal research laboratory. In this third group, the institution has opportunity to carry on its outstanding role of leadership. In this area one often has fatalities or disappointments, but there is tremendous satisfaction, because persistence in our efforts will at times produce something new which tomorrow will become standard therapy, available not only for youngsters in our community, but also for others throughout the country and in many other parts of the world. A few examples of such developments which have closely caught our attention in the past year are as follows:

The first concerns the correction of a serious deformity in the heart known as the Tetralogy of Fallot. This has long been known to produce a cyanotic condition in a baby or child, gives a remarkably deranged circulation, carries away a considerable number of individuals in the first year or two of life, has a secondary high toll in the late childhood, and leaves very few people living beyond the teen ages. It was not long ago that this was thought to be completely beyond any hope of total surgical correction, but remarkable therapeutic inroads have been made. Regardless of the fact that there had been some brilliant and highly satisfying recoveries from attempts to correct the anomaly, only two or three years ago the surgical mortality rate was between 50 and 60 per cent. There has been much in the way of perspiration, in tense thought, and long hours of vigil through the night in attempting to improve matters for these badly crippled youngsters.

We have come out of the darkness into a bright light, for in the last year the mortality rate has been reduced to 5 or 6 per cent, which is fantastic progress, and which a few years ago we would not have believed to be attainable. It is hardly necessary to add that this change brings to all of us in the institution a tremendous satisfaction. To have reached this goal means that scores of our staff people have labored dauntlessly, that hundreds of thousands of dollars have been spent in various ways in support of the program, and that many kinds of equipment and facilities have been required. All of this effort has been made possible by grants from several research agencies and by financial contributions from many interested friends. There has been much toil and many disappointments; often we have had a feeling of overwhelming hopelessness when struggling with this problem. However, the heavy investment in dollars and efforts now fade into the background. They have all been justified by the realization that a technical procedure has now advanced to the point that we can offer it with extreme satisfaction in a fairly routine way for a large number of youngsters in the future.

Ventricular Septal Defects

A second example of recent progress concerns openings between the two sides of the heart. A decade ago, means were found to close orifices between the two auricles. Such operative repair has long been well-established and it carries a surgical risk of less than one-half per cent. Conversely, openings between the two lower chambers, the ventricles, have presented much more formidable obstacles when attempts have been made to close them. The main frustration had to do with the fact that the nerve-conduction system of the heart generally runs along one corner of the opening; to surgically close the septal hole was frequently complicated by injury to this important nerve, producing "heart block" which led to fatality, or to serious impairment of the cardiac action. This dis-

astrous complication made us gun-shy of working in this important area, so that surgical closures in other cases led us to assiduously keep away from this dangerous corner. Thus, we often ended up after operation with a patient who had only partial closure of the defect, and who was left with some leakage. Up until a year and a half ago, surgical closure of ventricular septal defects, while occasionally productive of a very gratifying and perfect result, was in too many instances followed either by a very disturbing nerve-block or by some presistence of the shunt. Focusing on this problem, we have now been able to develop a technique whereby with the appropriate onlay of a double patch of Ivalon, we can close off a ventricular septal defect of any size, can virtually guarantee complete obliteration of it, and can in all instances avoid a block. Thus, there is now available an extremely satisfactory method for repair of this abnormality, which exists literally in thousands of children.

In the past, supporting patients on a mechanical heart-lung machine was in some instances followed by serious bleeding in the chest some hours after operation was completed. This was seldom seen in children where there had been a short run of only 20 or 30 minutes, but it was fairly common in those where perfusions of one to two hours were necessary to repair the more complicated cardiac defects. These hemorrhagic complications were serious, often required enormous amounts of blood for transfusion replacement, and indeed, in some instances were completely baffling to us and ended in fatality from exsanguining blood loss. We have been fortunate in having Dr. Sherwin Kevy from our blood bank, give serious thought to this matter, and ferret out the cause for the underlying hemological defect. By actual measurements, he has demonstrated that there is a tremendous increase of fibrinolysins circulating in the blood. Knowing this, we can now neutralize the fibrinolysins by the use of epsilon-amino-caproic acid, and our problems of postoperative bleedings have been largely eradicated. This is an excellent example of interdepartmental cooperative study and therapy.

In some individuals who are undergoing cardiac surgery, employing the pump-oxygenator for temporary support, we have been plagued in the past by development postoperatively of "pump lungs". This was a severe pulmonary congestion coming on 12 to 18 hours after the surgery, which seriously interfered with function of the lungs and impaired the ability of the patient to extract oxygen from the surrounding room air. While a few individuals could be tided along for three or four days until this lung reaction subsided, the vast majority succumbed in 24 to 36 hours to the massive lung reaction. This was a particularly tragic complication after we had been able to completely eradicate a deformity which had existed within the heart. The "pump-lung syndromes" was fairly common, and we were at a loss to understand its cause. We certainly had very little effective therapy against it, once it had appeared. A study of the problem by clinical and laboratory investigation has shown that maintenance of a higher flow of blood to the lungs during temporary cardiopulmonary by-pass will preserve the vitality of the lung structures, thus heading off the destructive lung process. In the last year, we have stepped up and augmented the pulmonary flow during operation, and our troubles with "pump-lungs" have practically disappeared.

Cardiovascular surgery has long been a subject of high interest on our Service, and rightfully we can be proud of the many contributions to this field which have come from our hospital. A recent adding up of figures show that there have been more than 4500 youngsters over the years who have had here some operation on the heart or great vessels near it. Out of these, there have been a little more than 1000 who have had support during operation by the use of an artificial heart-lung apparatus, and who have had some "open" operation within the heart itself. The development, building, and operation of a machine to do this job has placed this technique on such a satisfactory basis that we now employ it on an almost daily basis, and feel that this supportive adjunct can be used as a routine measure, carrying practically no threat to the individual, but yet permitting us to work within the heart in a way which was not possible a few years ago. While the cardiovascular surgery in this hospital has received a good deal of attention, it is well to point out that actually this constitutes only about one-tenth of our total operative case-load on the General Surgical Service.

General Surgical Review Done

From time to time, a specific group of cases, such as hernia, intussusception, appendi-

citis, harelip, et cetera, has been studied by some staff man who has become particularly interested in the particular malady. A review is made of all of our case-records, making the summarized information available, not only to us, but also offering its value to others by publishing the material in printed form. However, because of the tremendous amount of work involved, we have seldom summarized *all* of the work of the entire Service over a period of years, covering all subjects which have come under our care. Such a vast review was made in 1939, and a very extensive one was completed in 1952, the latter summarizing all material for the eleven years prior to that time. We have now felt that the time has arrived to make such a step again. During the past year, records of all general surgical patients since 1952 have been pulled out for review, for study, and for adding up what has been good and what has been poor in the management of all the various pathologic states that we have been called upon to treat. This has been an enormous job, requiring a study of more than 30,000 records, but the compilation is now complete, and from this broad survey, we have amassed a unique summarization of material, which can form an authoritative basis for many publications, and which should be brought together in book form, a task which will probably take another two or three years for completion.

During the past year, an Intensive Care Recovery Unit has been established by revamping a portion of the fifth floor of the Farley Building. This Unit contains 11 beds, and is exceedingly well set up from the view of architectural and facility arrangements, to give the best possible care for critically-ill postoperative patients. The Administration and Nursing Service have designed and staffed this Unit in a very admirable way; it brings together the best from several directions to support surgical patients. The formation of this unit has been a tremendous asset in our work.

Hyperbaric Oxygenation

During the past three years, Dr. William F. Bernhard has focused intensely on the possible benefits of subjecting animals to hyperbaric states, placing them in a chamber where the pressure of the contained air has been raised to three or four times that of the normal atmosphere. This has the effect of forcing extremely large amounts of oxygen into the body. It has been found that this has a tremendous advantage, when carrying out some operative procedure in the chest, particularly, as it might relate to repair of certain cardiovascular disorders. Extending these observations further, a group of more than 100 seriously-ill babies have now been operated upon, the surgical team carrying out the procedure in a small operating room set up in a hyperbaric chamber which we have temporarily leased from the nearby Harvard School of Public Health. Various observations have convinced us that the technique of supplying excess oxygen by hyperbaric means has tremendous advantages, particularly in the handling of fragile cardiovascular youngsters in the first year or two of life, which constitutes a group of patients who have been coming to us in increasing numbers in the past few years. With this knowledge, we have felt justified in seeking funds for the building of a new and more modern hyperbaric facility, to be set up on the hospital grounds. The United States Public Health Service has made a large grant to the hospital to build such a unit, which will be housed in the new building which is now being constructed just northeast of the Farley Building. This new hyperbaric chamber should be available and in operation sometime during the latter part of 1965.

Our Laboratory for Surgical Research, on the third and fourth floors of the Carnegie Building, has been the site of many important studies. These are largely attempts to find practical ways of solving some of the many perplexities which are presented to us in the clinical side of the hospital. I have great enthusiasm for this activity which has been supported through the years by government grants, foundation research grants, and by many individual contributions from parents and friends who have recognized the value of these endeavors, and who are desirous of continuing them. The number of important contributions which have come from the Laboratory over the past decade is outstanding, and fully justifies all the efforts, space, man-hours, and dollars which have gone into the venture. While there are many lines of research being currently conducted, I will mention here only one which stands out for 1964.

We have long known in the hospital that one of the major complications of abdominal surgery is the possible development of intestinal adhe-

sions, leading to subsequent intestinal obstruction, and not infrequently leading to death, even though there has been relief of the original disease for which operation had been undertaken. The formation of postoperative adhesions is much more prolific in children than it is in adults, and it is by far most common and disastrous in the infant group. On several previous occasions, we have endeavored to find means for avoiding or minimizing the formation of peritoneal adhesions, but these have had little success in terms of making available a satisfactory technique which could be applied to human subjects. Fortunately, Dr. Robert Replogle has entered this field, and with considerable vigor and a "new look" has taken up and followed suggestions from some of our confreres in the Harvard Medical School. To make a long story short, he has shown that following intra-abdominal operations, the inflammatory response of pouring out fibrin, and the subsequent organization of this into intra-abdominal bands can be totally or largely avoided by administration of large doses of Phenergan and Decadron over a three-day period. A long series of animal experimentations, involving observations on more than 300 dogs, have shown the effectiveness of this drug management and the safety with which it can be employed. On the basis of these laboratory studies, we are now beginning to use the technique in the hospital, and there is a strong feeling that we are well on the way to elimination of one of the scourges which has long plagued the abdominal surgery of infancy and childhood.

The activities, the outstanding interests, and the direction of thoughts of various members of the Surgical Department can best be summed up by a review of the articles which have appeared in print during the last year, and which are listed elsewhere in this annual report.

Robert E. Gross, M.D.
Surgeon-in-Chief

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Total visits to the Out-Patient Department for the fiscal year 1964 were 129,183 compared to 118,414 for fiscal year 1963, an increase in 1964 of almost 10,000 visits compared to an increase of 5,000 visits for 1963 compared to 1962. The 1964 total increase in visits to all clinics was 10 per cent, of which Emergency Clinic visits increased 23 per cent and Appointment Clinic visits increased three per cent.

The increase in number of "New Patients" to the Out-Patient Department during this fiscal year, as compared with 1963 was 595, an increase of four per cent. As would be expected, the combined Emergency Clinics accounted for the greatest share of this increase.

The Appointment Clinics "new" and "Total Visit" figures for 1964 showed little variation from 1963 with the exception of the Adolescent Clinic, which showed an increase of 40 per cent in Total Visits over fiscal year 1963, and Hearing and Speech Clinic showed a 50 per cent increase for the same period.

In order to meet the demands this increase in service indicates, the number of resident physicians has been increased in the Medical Emergency Service as well as clerical assistance within the last two years. An Evening, Administrative Supervisor is on duty in OPD Admitting until 11 P.M., and both Medical and Medical Emergency have a full-time laboratory technician. Nursing Staff has not increased appreciably although nursing students spend less time in the clinic than formerly.

On September 1, 1963, Dr. Thomas E. Cone, Jr., was appointed Director of Ambulatory Services and on April 1, 1964, he was also named to be Chief of the Medical Out-Patient Department. He replaced Dr. Charles D. Cook, who resigned after 10 years in this position to become Professor and Chairman of Pediatrics at Yale School of Medicine and Pediatrician-in-Chief of Grace New Haven Hospital.

Sustained and continuous progress is evident when one visits the Out-Patient Department. This progress is seen not only in the planning and designing of a new, large, eleven-story ambulatory care building in which many of the clinics will be housed, but also in our intense efforts to improve ambulatory patient care. This new building, to replace our present obsolete out-patient facilities now located in six buildings, is under construction and will be completed in 1967 at an estimated cost of $4,500,000.

Of prime concern is the desire on the part of all members of the OPD Staff to prevent patient care from being mechanized and impersonal. In the age of computer technology, constant vigilance and attention is essential to prevent the physician's rapport with his patients, which is the *sine qua non* of medical practice, from also being programmed into the system. If this were to happen, patient care would become so dehumanized that the qualities of compassion, warmth and interest, the hallmarks of the true physician, would disappear; both the physician and patient would be the loser.

One vexing problem is that, in general, current medical care is based on a discontinuous series of acute episodes without knowledge of setting, ecology or other indirect influences.

The OPD, and particularly MOPD, continues to provide pediatric residencies in ambulatory medicine to physicians not only from our own country but also to many foreign physicians from every continent. The latter return to their homelands with a better appreciation of the United States and also carry back to their own countries the knowledge of the newer diagnostic and theraupeutic techniques which we practice. Through these physicians scattered over the globe, the benefits of the ever-expanding medical knowledge developed in academic and laboratory setting is transmitted to the children of their countries. This aspect of our medical training program should be continued if we are to continue to be one of the great disseminators of knowledge to help *all* children.

Thomas E. Cone, M.D.
Director

OUT-PATIENT STATISTICAL REPORTS
FISCAL YEARS 1964 AND 1963

Medical Out-Patient Department	*Total Visits*		*New Patients*	
	1964	*1963*	*1964*	*1963*
General Medical Clinic	2,319	2,364	7,420	7,544
Special Medical Clinic	226	139	11,868	10,961
Medical Emergency Clinic	5,316	4,810	27,640	21,658
Medical Surgical Emergency	814	924	2,681	2,716
Total Medical O. P. D.	8,675	8,237	49,609	42,879

"There is a wealth of ministry which records cannot contain — which words cannot express — nor accounts portray."

The physicians who provide health care for the Personnel and the House Staff of the Children's Hospital Medical Center seem to exemplify the above quotation in their efforts to contribute to the well-being of the hospital employees and in their continued willingness to serve above and beyond the call of duty.

The most important event in the development of the Health Service during this reporting period was the move to 1 Blackfan Street. We now have two examining rooms, a doctor's office, a laboratory, a receptionist area, a rest room, and a nursing office. Our new quarters are most attractive and functional, providing privacy for the patient. We are grateful to the administration of the hospital for its assistance and cooperation in making it possible for us to enjoy this new location.

The Health Service now has secretarial service, making it possible to maintain more complete records and to expedite correspondence and reports with greater rapidity.

New Programs Planned

With improved space and facilities, we plan to have additional programs such as routine diphtheria tetanus innoculations for all employees, beginning this hospital wide program with all new personnel and persons who are in high risk areas. Eventually we hope to cover all employees of the Children's Hospital Medical Center.

It will be noted in the accompanying statistical summary that there is a marked variation in the number of immunizations recorded. This will always be true due to the varying recommendations of the United States Public Health Service and/or the Infectious Disease Department of the Children's Hospital Medical Center, predicated of course, by the incidence of a given disease in the community.

Sincere and deep appreciation is due Dr. Robert J. MacMillan and Dr. Morton J. Franklin for all that they have contributed to the Health Program.

As we look forward to the future, we trust that we may better serve all employees of the Children's Hospital Medical Center.

Hester E. Macuen, R.N.
Director

STATISTICS EMPLOYEE HEALTH SERVICE

	1963	*1964*
Physical Examinations	720	711
Medical Visits and Follow Up	1404	1803
Over 65 — Physical Examinations		44
Nursing Visits and Consultations	1896	1357
Services Rendered to House Staff — Total Service	417	425
Referred to CHMC — X-Ray	153	487
Referred to CHMC — Laboratory (Tests)	986	1969
Referred to CHMC — Electrocardiograms	12	46
Referred to CHMC — Dental	31	25
Referred for Photofluorograms	769	608
Referred to other Hospitals	53	61
Referred to Private Physicians	60	41
Industrial Accidents	110	205
Total	6611	7782
Immunizations		
Polyvalent Influenza Vaccine	620	10
Sabin polio vaccine	1762	13
Other	126	150
Total	2508	173
Grand Total	9119	7955

The administrative departments grouped under the heading of General Services include Dietary, Planning Office, Maintenance and Engineering, Housekeeping, Laundry, Print Shop, Reception Service, Communications, Messenger Service, Security, and Parking.

More than 350 professional and service personnel are required to staff these supporting services. The activity of these departments is a reflection of the nursing, teaching, and research efforts of the entire Medical Center.

Dietary Department

This department, under the direction of Miss Maxine Gilson, has placed a large share of its energy on the improvement of the food service to our patients. During the year, dietary personnel have replaced nursing and housekeeping personnel in the operation of the division kitchens. This change not only provides direct professional supervision of the patient feeding, but allows the nurses to devote more time to the care of patients. It is expected that 1965 will see completion of this change.

Also during the year, Miss Gilson's staff has become more active in the Out-Patient Department. A Staff Dietitian has been a contributing member of the PKU Clinic since its inception in 1963. Another Staff Dietitian has been appointed as a consultant to the general Medical Clinic to assist the Medical Staff in the planning of special diets and in instructing parents in the preparation of these diets.

The staff and employee Cafeteria serves a larger number of individuals each year, with an increase in 1964 over the previous year of 59,000 persons. Serving hours have been expanded, but the dining room has reached its capacity at peak feeding hours. Present and future buildings will incorporate additional dining facilities to match the institution's growth.

Planning Office

The Hospital's Planning Office, under the direction of Mr. Arthur Stomberg, has had an extremely active year. Its primary function is two fold. First, the needs for new facilities, as expressed by the Trustees and Medical Staff, must be interpreted to consulting architects and engineers; and second, construction must be supervised as the various projects get underway.

Construction of the first phase of the 11-story Out-Patient and Clinic and Research Building is currently in progress. Plans were completed for the renovation of Division 25 in the Farley Building for a Clinical Research Center. Mr. Stomberg has worked in close conjunction with Drs. Gross and Bernhard in the design of a new hyperbaric operating chamber. These plans culminated in the awarding of a $340,000 government grant for the construction and installation of this chamber now scheduled for completion in July of 1965. Also completed was the conversion of the Hospital's electrical power supply from 4,160 volts to 13,800 volts. This entailed the construction of a new transformer unit.

Much time has also been spent on the design of a 12-story building which would house a Center for Research on Mental Retardation and Related Aspects of Human Development, and also several stories of much needed general research space.

Also nearly completed are final preliminary plans for a staff apartment house, a dormitory for house staff, motel for parents and patients, a large restaurant for staff and visitors, and a day care nursery for the children of working staff. All of these will be incorporated in one building project, independently financed. Construction should begin in late 1965.

Maintenance and Engineering

Mr. George Stilgoe, Plant Engineer, through his staff of electricians, plumbers, mechanics, carpenters, painters, and grounds keepers, has the responsibility for maintaining the existing plant and equipment. In addition, he has supervised several renovation projects including the moving of the Newborn Nursery, extensive alterations to an old two-story building which was purchased to provide clinic space for the Family Health Clinic and the Maternal and Infant Health Research Unit, the relocation of our bulk oxygen supply, and the remodeling of another portion of Division 25 for an Intensive Care Unit. Also the old Brace Shop building was remodeled to accommodate the Personnel Office and the Employee Health Clinic.

The coming years will see much time and effort spent in adapting the existing plant to the new buildings as they rise. Steam lines, power supplies, telephone cables, water lines, fire alarms, not to mention pedestrian traffic routes, will all have to be changed, revised and re-routed.

Housekeeping

The Housekeeping Department is managed by Mr. Lawrence Levinson. Administratively it is divided into three sections: Patient Areas, Linen and Uniform Service, and Building Services.

Mr. Levinson continues to place emphasis upon improving the methods and skills of his department personnel.

Several industrial engineering studies have been carried out in conjunction with Northeastern University in addition to the continuing studies by the department itself. In addition to the training program for housekeeping supervisors as reported in 1962, a program for line personnel has been initiated.

The purchase of new linen and distribution of clean laundry to the nursing units has been placed upon a regular scheduled basis in order to prevent rush buying and emergency deliveries.

The Manager has also been instrumental in the organization of a Hospital Housekeeping course which will be sponsored by the University of Massachusetts in conjunction with the Massachusetts Hospital Association.

Print Shop

Mr. Salvatore Caliguri is responsible for the Hospital's printing and duplicating department. This is now split between a small offset duplicating and addressographing office on the Hospital grounds, and a larger shop located on the premises of the Hospital Laundry Association, Inc.

Printing valued in excess of $75,000 was produced during 1964, with the total number of impressions well in excess of 8,000,000. Although there are apparent cost savings from the operating of our own shop, the chief advantage continues to be the rapid and specialized service which it affords.

Communications

In 1964, Miss Josephine Daley, Chief Telephone Operator and a member of the Hospital family for over 30 years, retired. Mrs. Helen Bennett replaced Miss Daley.

The Hospital now has over 1,000 telephones in use and an average monthly telephone bill of $10,000. Several new procedures in handling of calls, particularly long distance, have enabled our operators to devote 25 to 30 percent more of their time to handling of calls from patients, parents, and visitors.

Reception and Information Service

Mrs. Grace Bradley retired as Chief Receptionist during the year and was replaced by Mrs. Bernadette Foley. Mrs. Foley has the responsibility for scheduling full seven-day receptionist coverage of the four principal entrances to the Hospital. In addition she is undertaking a review and updating of all of the office, directional and information signs throughout the many buildings.

The Reception Service maintains an active lost and found service.

Messenger Service

The dispatch service is operated by Mr. George Nicoll. This service was reorganized during 1964 to provide regular, in some cases hourly, pick up and delivery service throughout the Hospital and medical area. This change has resulted in faster service and a sharp reduction in calls for special deliveries.

Parking

The new parking garage on Blackfan Street was inaugurated in June. It handles an average of 475 visitor cars per day, in addition to about 200 staff and employee cars. As yet the seventh floor has not been used, having been constructed for anticipated increase in demand.

Costs of operating the garage, debt, service and amortization costs are approximately $12,000 per month. It is anticipated that 1965 will see parking revenue equal to that amount. The object of management is to hold parking rates, both for visitors and staff, at a level which will equal these costs.

Communications, Reception, Messenger, Security and Parking all have been under the administrative direction of Mr. John A. Lombardo.

Summary

The 1962 Annual Report stressed the importance of our effective job evaluation program and of a comprehensive wage and salary program. Through the efforts of the Personnel Department, the Administration and Trustees, significant improvements have been made.

We may now look forward to the extensive planning necessary for the efficient and orderly servicing of the Hospital's new buildings, and supporting the many staff members and employees who will work in them.

Rudman J. Ham
Director

The most important project undertaken during the last two years by the Controller's Department has been the Total Hospital Management Information System. This report is devoted both to describing the scope of this computer project, and to pointing out changes and improvements in fiscal administration accomplished during the last two years in other sections of this Department.

Total Hospital Management Information System

Our present mechanized tabulating equipment has been used at CHMC since 1950, principally in the following financial applications: ancillary service charge requisitions, payroll, accounts payable, inventory, accounts receivable, income and expense statements, and general fund and special fund ledgers.

Because of the increasing scope and complexity of operations at CHMC, in 1962 we recommended a comprehensive program to further integrate, through data processing equipment, medical record data both for patient care and research, as well as revenue, expense, statistical data, and inpatient and outpatient ancillary service charging through master price files.

In 1963, Webster J. McKnight was promoted to Assistant Controller. His major activity in the Systems, Procedures, and Electronic Data Processing Section has been the study and planning, with the Controller, of this comprehensive system.

We recognized from this study that further improvement of the systems and procedures of the financial operations of the Hospital depended upon rapid and accurate communication of information to be recorded and retrieved on a demand basis. The information required was not only for fiscal administration, e.g., utilization of beds, clinics, etc., but also medical statistics, e.g., diagnosis, age, sex, length of stay, etc. Further, it was recognized that the rising personnel costs of the Hospital were related to this growing demand for information retrieval. We believed that the need for information should be met by a well-designed data processing system; that, if this system could be integrated with a central processor, a computer, the expanded data processing would not increase present operating expenses. In other words, although we were outgrowing our present equipment, we felt very strongly that we could not defend simply a further mechanization of the present financial applications; we could only recommend that the present procedures be reviewed and revised, where necessary, to provide an efficient *total hospital management* computer-based information system.

Our objective was a comprehensive system embracing the recording, processing, and retrieval of medical, statistical, and financial accounting data, in that order. The first emphasis is the capturing, storage, and retrieval of the medical and statistical data. Once the system has processed this information efficiently, the financial data become collateral output. The proposed system is described more completely later in this report.

The Executive Board of Trustees approved our objectives, and Cresap, McCormick & Paget was engaged as consultant to assist in the preparation of the specifications to the computer manufacturers, evaluation of the manufacturers' proposals, and, following this, the implementation of the system.

In developing a total system, there are three concepts basic to the information system:

1. *Input*
   The system should be able to capture the original entry of information in a form that will make re-entry unnecessary and will afford the maximum automation of subsequent processing.

2. *Storage*
   The system should have the capacity to store, process, and update large amounts of information as required.

3. *Output*
   The system should be able to retrieve and reproduce upon inquiry, current medical, statistical, and financial data.

This means that all pertinent information will be, in computer language, "on-line" or, in layman's terms, available, updated, and waiting upon demand to be reproduced by some form of output terminal, either typewriter, teletype, or visual display, e.g., cathode ray "TV" screen. (Similar "on-line" data systems are used for airline reservations, etc.)

"Computer Configurations, By Phase," illustrates the on-line communication of the total system and the phasing of its installation:

July, 1965 — Conversion and transfer of present financial applications to computer.
October, 1965 — Design and development of input/output terminals for on-line communication to computer.
1966/1967 — Implementation of data communication terminals.
1967/1968 — Total Hospital Management Information System.

In order to achieve the objectives mentioned above, the Hospital will utilize the electronic data processing equipment in the following major areas:

Clinics

In the clinics, we plan centralized scheduling of appointments by on-line communication with the computer. The system will provide a central file (magnetic disks or tape) for all clinic activities.

Bed Utilization

In order to adequately plan for peak occupancy periods, elective admissions will be stored in the computer. Based on studies of utilization, the computer will provide availability of beds for the non-scheduled admissions. In addition, the output data will provide geographical, sociological, admitting information, referring physicians, discharge diagnosis and other inpatient statistics.

Medical Records

Here, two applications are planned. The first is a medical record "locater file" available on an inquiry basis from magnetic disk storage. This file system should improve the locating of medical records which, in an institution of this size and complexity, is a very major problem since medical records are required on demand for each of the several clinics and in the inpatient areas. The other application in the medical records area, closely related to research, will be the creation of a medical record abstract, or, as it is sometimes called, a patient profile. It will summarize treatment and procedures, as well as other basic medical and clinical information. This abstract will be stored in the computer either on disks or tapes. Retrieval of these data will thus be available to professional personnel in both the patient care and research activities.

Patient Accounting

Here again, this application is really the output of a well-designed input system covering the charges for services performed for the patient. All services will be centrally priced to the extent possible by the computer, a master patient account will be charged, and invoice-statements printed out, as required.

Financial Applications

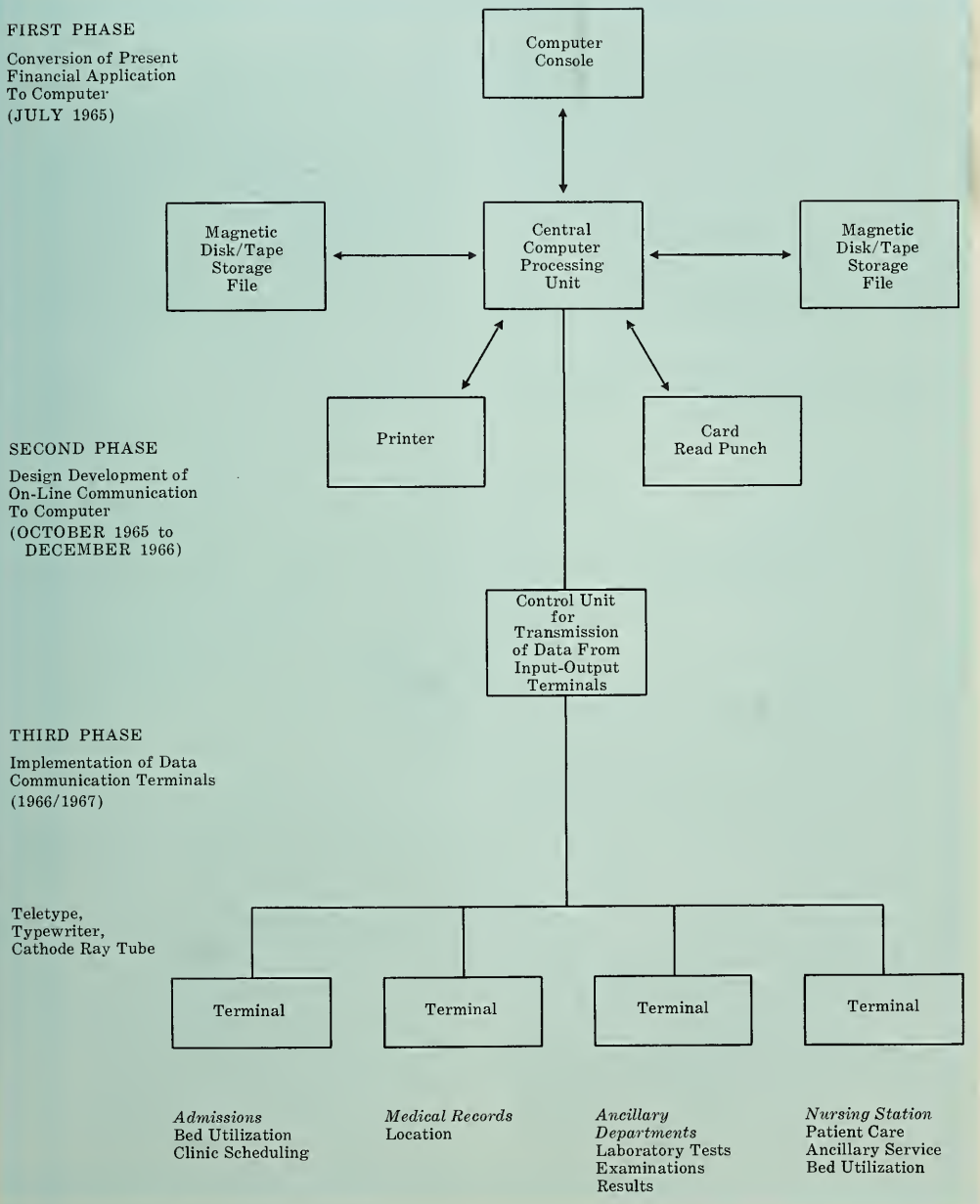
The financial data presently being processed through our tabulating equipment will be converted to computer processing. This will result in expanded departmental expense and revenue reports, research fund reports, internal and state required cost, financial, and statistical reports. In addition, forecasting of revenue and expenses, changes in bed complement, changes in clinic services, etc., may be projected with the equipment.

Hospital Information System

The "total" application which, of course, includes all the preceding, comprehends further use of the equipment for on-line communication. In this application, we plan to install input/output terminals not only in the clinics but in the several nursing stations and at other ancillary and financial service points throughout the Hospital. The design of these terminals is under study. They may be either teletype or typewriter keyboard, or a visual display cathode ray tube. Through these terminals, requisitions for ancillary services, drugs, medical and surgical supplies, bed inquiries, clinic inquiries, etc., will be channeled. Ancillary service requests will be processed, recorded, and updated through the computer. The output will be periodic reports for the respective laboratories and data for the patient's medical record, and for the nursing station.

In other words, the total information system is the planning, designing, and implementation of a management system in which data of all services and departments can be stored in the computer, updated with subsequent transactions or requests, and retrieved upon demand either in the form of printed reports or replies to inquiries. The installation of this total system is the goal towards which we have been directing our efforts during the last two years.

COMPUTER CONFIGURATIONS, BY PHASE



Other Fiscal Services

At this point we should like to list briefly certain changes and improvements in fiscal administration accomplished during the last two years.

Systems, Procedures, and Electronic Data Processing Section

This section coordinates systems, procedures, design and control of all hospital forms and, with the approval of the Controller and the General Director, establishes new rates when indicated and updates existing rates for all patient services.

During 1963 and 1964, the patient rate structure was added to or revised 22 times. The effect upon patient revenue of some of these major changes is shown below:

Rate Structure Major Revisions	*Increased Revenue on Annual Basis*
Day rate increases:	
1963: None	
February 1, 1964: $2.00 per day	$195,000
Operating room and recovery room	80,000
Radiology	55,000
Blood Bank	75,000
Physical Therapy	45,000
Respiratory Therapy (New service — March 1, 1964)	300,000

Other rate changes during the same period, as well as systems studies not involving the rate structure, represent a considerable amount of planning, implementation, forms and procedural revision supported by Policy and Procedure Bulletins and assistance to department heads. Some of the areas in which projects were conducted were:

Admitting Office
Cerebral Palsy Clinic
Cardiology Laboratory
Hearing & Speech Therapy
Neurophysiological Laboratory
Psychiatric Evaluations and Therapy
Psychological Evaluations

In addition, the Systems and Procedures Section assisted in the establishment of the Respiratory Therapy Department procedures and the Data Processing Section designed a charge system integrated with data processing for both patient billing and tabulated departmental financial and statistical control reports.

Patient Accounting

The effect of the rise in rates and new services has been to increase patient revenue 14 percent in 1964 over 1962. Although total patient revenue increased $1,500,000 in the past two years, 14 percent due to rates and 15 percent to utilization, we are pleased to report that we have effected a substantial improvement in the collection of accounts receivable, through more active collection follow-up and increased welfare agency filings, by the credit and community assistance offices. These few figures show this improvement, in the *inpatient* collections:

	Fiscal Years			
	1964	*1963*	*1962*	*Increase (Decrease) 1964 vs. 1962*
Year's inpatient billings	$5,810,000	$5,020,000	$4,600,000	$1,210,000 27%
Average day inpatient billings	15,810	13,700	12,600	3,200 25%
Based on the average inpatient receivables, the number of days uncollected at September 30 were	103	119	123	(20) 16%

As shown above, although inpatient billings in 1964 were up 27 percent over 1962, the outstanding receivables at the end of 1964 were 103 days, compared to 123 days (four months) at 1962. This 20-day reduction (16 percent) in outstandings resulted in increased cash flow of $300,000. We shall continue to accelerate collections; however, under the present third-party claim filing and billing procedures required by welfare agencies, and the present insurance claim requirements, it is impossible to complete the forms and claim collection within a much shorter period. It should also be recognized that self-paying patients (no claim filings) represent only 10 percent of the total patients, while the third-party payers through claim forms are 90 percent (Blue Cross 55 percent; other insurance 20 percent; welfare agencies 15 percent).

Purchasing

During 1964, our Purchasing Agent, Miss Betty Fitzgerald, who had served the Hospital faithfully and well for close to 50 years, retired and was succeeded by Bernard Stillwell who came to CHMC from the New York University Medical Center. The purchasing activity has increased in keeping with the rise in general fund and special fund research activities. In 1963, purchase orders amounted to a dollar value of $2,800,000, and in 1964 the volume rose to $3,500,000.

Several policy and procedure changes, with the resultant design or revision of the appropriate forms, have been initiated in order to reduce paper processing and increase the time available for assisting department heads in effective purchasing — quality control, deliveries, and price.

Conclusion

Our goal continues to be the steady improvement in all aspects of the fiscal administration of the Hospital, as well as the smooth, effective installation and implementation of the Total Hospital Management Information System. We appreciate the active interest in the information system shown by the Chiefs of Service and Division Chiefs, by the Trustees and Officers, and by the department heads of the Hospital. To quote a senior member of our management consulting firm, "it will be the most comprehensive and extensive in the hospital field."

Richard E. Held, CPA
Director

During the past two years, this department has coped with its responsibilities to the Hospital community in spite of constantly diminishing work and storage space, three changes in heads of department, and the mushrooming activities of the Out-Patient Department. It is to the credit of the members of the department and in particular Miss Strosser, that business went on "as usual".

A thorough reorganization of the department was undertaken by Mrs. Corinne Norton during her stay, and has greatly aided operations. A new section, Medical Record Review, was created to handle the duties of in-patient record processing and analysis and functions preassigned to the Filing Section; procedures in Steno were streamlined enabling the secretaries to eliminate their backlog of dictated material for typing.

The lack of space for record storage reached critical proportions in 1964. It was evident that microfilming one year of records each year was not going to release enough space for new records. In addition many members of the medical staff had indicated their unhappiness with the records in the microfilm state. Investigations proved that it was more economical to store medical records off the premises than to microfilm them and consequently 60,000 medical records were transferred to the New England Storage Warehouse.

Further studies indicated that the records stored in the basement of the Peabody House were split in two sections and filed under two different filing systems, and there was very little space left for new records in the Building A files. In a series of moves during the summer of 1964, the Peabody House files were reorganized and the Building A files were weeded out. After a massive transfer of approximately 160,000 records, we now have two like organized file areas with seven years of records in Building A and five years at the Peabody House. The remainder of the records are in storage or on microfilm.

Indexing Method Changed

The method of indexing medical records was changed in 1963 from the Standard Nomenclature of Diseases and Operations to International Classification of Diseases, Adapted. This new system is recommended by American Hospital Association and is currently in use by all of the Harvard hospitals.

New electric power files were purchased for the patient's index cards. These machines store the same number of cards in one-half the floor space, thereby freeing up a desperately needed traffic area.

During the past two years, three members of the department have been enrolled in the Correspondence Course for Medical Record Personnel, sponsored by the American Association of Medical Record Librarians. They are Miss Mary Strosser, Assistant Director; Miss Gertrude Mullin, Supervisor Location & Files and Miss Margaret Voellmecke, Supervisor Medical Record Review. Miss Strosser has completed the course and passed the national examination for Accredited Record Technicians and in addition by dint of much hard work, completed her educational and experience requirements for writing the Association's Registration Examination. This she did successfully in December, 1964.

Students from the Massachusetts General Hospital School for Medical Record Librarians again spent a month in the department on an affiliation. Since the school at Massachusetts General Hospital has closed, no students came in 1964. Students did come, however, from Endicott Junior College in December of '63 and '64 for a month's work in the department.

Future Plans

Our current plans are twofold—those concerning developments over the next three years and those concerning developments for the new building.

First, we will try to make a little more space where there is none and try to ease the extremely crowded work condition. This will be done through the use of modular furniture, conversion to vertical files, etc.

Second, we will continue the organizational review as begun by Mrs. Norton in the hopes of streamlining more procedures and eliminating unnecessary ones.

Long range planning becomes much more complicated as it involves close coordination with other departments of the hospital. We would like to see some of the following come into fruition:

Centralized control and filing of all patient's medical records.

Centralized dictation facilities for in- and out-patient work.

Adequate research library for medical staff with areas that can be assigned to researcher for extended periods of time.

Mechanization of all *active* patient files for ease and rapidity of reference.

Utilization of the proposed computer facilities for all manner of projects and work assignments within the department.

In summary, one might say that the immediate problems facing us are considerable but by no means unsolvable. The personnel turnover has decreased particularly since the grade adjustments of September, 1964, and we find we are able to accomplish more tasks as a result. The future gives us an opportunity for development of a top notch modern record system of which C.H.M.C. can be proud. At least that will be our goal and one well worth working for.

Ruth A. Hayward, R.R.L.
Director

STATISTICS	*1962*	*1964*
1. Total # medical records pulled, all purposes	90,629	145,804
2. Total # new records issued	15,781	20,599

In the 1962 report of the Nursing Service there appears the following: "Throughout the country, hospital administrators and nurses alike now recognize that it is imperative to realign responsibilities in hospitals so that nursing time is not spent on activities which others with different preparation can do better, or those with less preparation can do just as well." It is most encouraging to tell of the progress since that report was written. The active support of hospital administration and the cooperation of other departments are responsible for the gains thus far and give confidence that further progress will be possible.

Transfer of functions from nursing to other departments should be paralleled by reorganization within the nursing service to utilize lay persons in as many jobs as possible; steps have been made in this direction as well. Much remains to be done but the past two years have seen more progress than any other comparable time.

Among accomplishments which have had a most favorable effect on nursing are a number initiated by other departments, including Pharmacy, Housekeeping, Milk Room, and Dietary, which permitted more efficient use of nursing time.

Nursing Realignment

Within the nursing department, developments have occurred with the same end in view. Four individuals have been employed as administrative assistants to the service supervisors, with responsibility for activities not involved in direct patient care, including administrative chores. This has been most effective in strengthening the administration of nursing service. The next step is to relieve division nursing personnel of any responsibility for oversight of certain administrative duties.

As the nursing service has grown and the turnover of personnel continues high, the volume of paper work has become well nigh unmanageable. The Personnel Department carries on its usual functions in regard to auxiliary workers in nursing service, but thus far has not done the initial screening of registered nurses. This change is planned for next year. Even with this help from Personnel the nursing office will continue to have a heavy load since at best Personnel can only assume the preliminary procedures. To relieve the nurses, the position of personnel administrative assistant was established in 1963, to prepare nursing payroll, interview candidates for positions, interpret personnel policies to employees, and many other tasks.

Increase in salary scales and additional benefits for all personnel in the hospital have been most gratifying and have contributed to employee satisfaction. The relative ease with which auxiliary positions are filled attests to the better competitive position the hospital now holds.

Staffing Problem Continues

Shortage of registered nurses however continues to be a prime problem although number employed has risen somewhat.

The highest number ever on payroll was reached in November, 1963, when there were the equivalent of 188 full time staff; this was 36 fewer than estimated need according to the best judgment of the persons who prepared the manning table. Budget requests for 1965 are for a total of 521 employees as compared with 351 six years ago.

First among the causes of this startling inflation is the rise in patient occupancy which resulted in an average census in 1964 of 281 as compared with an average of 249 in 1959. As recently as 1962 the average census was only 254. Another factor is the increase in out-patient visits, especially in the emergency service, and an increase in the number of operations performed.

Nursing education has its part to play in the demand for staff. Nursing students have always contributed a great deal to the nursing of patients in hospitals with schools of nursing, and this has been especially true in this instituton where large numbers of affiliating students are enrolled along with The Children's Hospital students. While there has been no striking reduction in the hours of service rendered by these students, increasingly their availability for assignment which might best meet the needs of nursing service is restricted, as it should be, and it is anticipated that this trend will accelerate for the future.

New Nurses Need Guidance

Another effect of changes in nursing education is felt in the employment of recently graduated nurses. The duration and type of clinical experience has been altered in most schools of nursing, the philosophy being that it is not the province of the school to prepare an experienced

practitioner but rather to provide the student with the basic education to enter into practice. In a field in which change is as rapid as it is in the health services, it is more important for the educational program to develop an understanding of principles rather than training in current procedures and methods, since it is certain that adaptation to new developments will be continuous. This means that the nurse entering her first job needs far more instruction and guidance than was formerly the case, and is really not at all experienced in the management of a patient unit however skilled she may be in giving individual care to patients. It is not difficult to deduce that more people are needed to prepare this nurse on the job and to supervise her work.

The problem for the hospital nursing service is aggravated by the rapid movement of nurses from job to job or from job to marriage, so that this process of training must be repeated over and over again as new people join the staff.

Since registered nurses are in short supply, there now are employed more licensed practical nurses, nurse's aides and clerical staff in an effort to supplement the work of the registered nurse; thus, for 1965 more than half the budgeted positions are for other than professional nurses, again presenting a problem of on-the-job training.

Turnover in the entire registered nurse staff in 1963 was 58 percent; in 1964, 56 percent. While this seems not excessively high for the entire group, analysis would show that the turnover is almost exclusively, as would be anticipated, among the younger group of nurses, many of whom leave to be married. Fortunately there also is a large group of persons whose continuous and loyal employment helps to stabilize the nursing service.

Part Time Nurses Help

Part time nurses come in considerable numbers to fill crucial gaps in staffing so that today there are 45 of these as compared with 15 ten years ago. Among them are a number of alumnae of the school who have returned to nursing. And with so many young nurses leaving to be married, the increasing employment of married women provides something of a balance. Over one-third of the registered nurses are married.

The in-service education staff of three people bears responsibility for planning programs of orientation and instruction for employees, and observations and tours for many visitors and observers. This is an enormous assignment and one that grows each year as more persons are employed, their need for guidance increases and visitors become more numerous. This staff needs to be enlarged to include a nurse in the evening and one at night to give guidance and instruction to staff nurses and auxiliary workers as they enter upon these new and difficult periods of responsibility.

Included in the work of this department is the training of aides, a somewhat frustrating project because of the high rate of turnover which has been approximately 80 percent in the last two years. As has been said elsewhere in this report, there tends to be increasing dependence on the aide group in providing care; as a consequence better methods of instruction and utilization of this group are necessary and are goals for the future. The aide course was given eight times in 1963 and six times in 1964, with summer sessions for temporary employees being additional.

The in-service staff reports orientation programs for 107 nurses in 1963 and 114 in 1964. Weekly classes for members of the staff, usually clinical sessions, were planned throughout for both day and night nurses. Special programs were arranged: a workshop for head nurses in 1963 in collaboration with the nursing service at the New England Deaconess Hospital; a series of classes in cardiovascular nursing, medical nursing and surgical nursing for graduate nurses.

In each of the two years, nearly 100 groups or individuals came for tours or observations; for some of these rather extensive plans were required involving time of staff of many departments as well as that of the in-service instructors.

Exchange Visitor Program

Throughout there have been a number of nurses from abroad, most of whom were here under the Exchange Visitor Program of whom there usually are four to five at a time. These nurses work as trainees, receiving much of their guidance in the departments to which they are assigned, but needing as well the special help which the in-service staff is so ready to give with their many problems of adjustment.

Three nurses from Poland arrived in February, 1964, under the auspices of the Rockefeller Foundation. They were sent to this country for

six months to learn American methods of caring for children in hospitals so that they could return to the new children's hospital in Krakow to assume responsible positions in the nursing service.

Ahead for the educational staff is an ever expanding demand for their services in helping people to meet the many new developments of the future.

Some of the developments anticipated for the coming year and thereafter will be of great interest; the nursing service is never dull, no matter what the problems may be.

With the anticipated development of data processing methods in this hospital it is contemplated that terminal in-put stations in the patient areas may be part of the final plan. This possibility has stimulated keen interest in some members of the staff and the decisions in regard to computers will be eagerly awaited.

While at the present time there is no nursing supervisor in the out-patient department, it is hoped that one will be appointed soon and that she can assist the nursing staff to utilize opportunities to teach parents more helpfully than has been done in the past. Nurses meet their technical responsibilities very well, but because they are so busy sometimes overlook opportunities to help families with the care of their children. A nurse whose principal responsibility is to improve this aspect of out-patient nursing could contribute to better service.

In 1965 the hospital will receive for the first time Northeastern University nursing students, both for their formal experience in the care of children and as employees during their cooperative periods. Much careful planning will be necessary to include these young ladies as regular employees and to utilize their skills to the fullest, depending upon the point in the school program in which the individual happens to be.

More study is needed to determine how many nursing students from various programs can be given clinical experience in the facilities available. As students come from more and more schools with their own instructors, all of whom tend to seek for their students somewhat the same kinds of experiences, a method of determining a reasonable number is needed. So many varied groups strain the regular staff and may interfere with the orderly operation of the patient unit with detriment to the welfare of the patients.

The coming years promise to be stimulating; they also will make new demands upon an already busy staff. It is a credit to all nursing personnel that the complaint they most frequently voice is of their inability to do as much for patients as they wish.

Muriel B. Vesey, R.N.
Director of Nursing

Nursing Service Staff

	Sept. 30 1964
Registered Nurses	185
Licensed Practical Nurses	22
Aides, Orderlies	120
Administrative Assistants	6
Secretaries	2
Clerks	25
	360

The years 1963-1964 saw one significant change in the program of the school of nursing. After prolonged discussion and planning, arrangements were made with Northeastern University to admit Children's Hospital students for part of the first year instruction. The decision to make this move was a difficult one since the school had been associated with Simmons College for nearly 60 years, students having been first enrolled there shortly after the founding of the college. Simmons College however was unable to meet the school's request for changes so this association was most reluctantly terminated.

The primary objective of the school in making the change was to spread the courses over a longer period of time to relieve a crowded first semester. Also the students are able to enter regular college courses and thus obtain credit at Northeastern University. It is also possible to add two terms of English and a course in anthropology.

Naturally with more extensive college instruction, tuition expense rose; at the same time other charges were instituted, among them fees for board and room. Total expense to the student for the three year course will be approximately $3200.00, still far short of the expense to the school even after one recognizes the services rendered to the hospital's patients.

The program started in September 1964, covers four terms at Northeastern University with a full program during the first two 10-week terms and a less heavy schedule of college studies in the third and fourth terms.

The clinical courses in nursing are deferred somewhat by this plan but the faculty is still desirous of introducing the student to patient care at a very early stage in the course; thus students will continue to have limited experiences with patients in the hospital early in the freshman year.

It is recognized that this arrangement may possibly not be a permanent one since Northeastern University has many commitments, among them the development of programs in nursing, so that ultimately this school may be obliged to seek other resources.

The Women's Committee contributed $2000.00 during 1963 and 1964 for scholarships, and $800.00 to the loan funds of the school. During the same two years the Alumnae Association of the School of Nursing presented $1350.00 in scholarships to enrolled students.

The recent passage by the Congress of Public Law 88-581, *The Nurse Training Act,* assures the availability of loan funds in coming years and should serve as a stimulus to recruitment for nursing.

In 1963 the school engaged a full time instructor in nutrition. Previously this instructor had been part time with the school and assigned for the remainder of the year to the Dietary Department. The basic course in nutrition was taught at Simmons College and the nutrition instructor taught only therapeutics. The plan now is to teach nutrition in the home school and thus involve a nutritionist full time. As well as teaching freshmen students the foundation course in nutrition, she will incorporate nutritional instruction in all the clinical courses.

Accreditation Visit

In 1964 the school was visited by a representative of the National League for Nursing to survey the program for renewal of accreditation. The report received in July extends accreditation for two years but requested a revisit in 1966 because of weaknesses in the arrangement of the curriculum and in the content at certain points; there also was expressed concern about the organization of the faculty stemming in part from lack of clear delineation of responsibilities of persons involved in various programs of the school. Under study by the visitor was the program as presented to the currently enrolled classes; it could not take into account plans for the future.

A difficulty which this school has long encountered results from its being situated in a Children's Hospital and obliged to use other facilities for much of its program. Consequently there tends to be fragmentation of the curriculum, continuity is hard to sustain, and repetition is likely to occur. In spite of problems with program planning, however, it is pleasant to report satisfactory standing on State Board Examinations.

In 1963 the school graduated 33 students, in 1964, 38, and total graduates now number 1796. Dropout rates for these classes were 23.2 percent in 1963 and 20.8 percent in 1964, considerably lower than in the previous two years.

The hospital nursing service employs a goodly number of the school's graduates as evidenced by the figures for the two classes; 21 came to work on the staff in the fall of 1963 and 20 in 1964. A recent count showed that the staff included 76 Children's Hospital graduates of whom 20 were working part-time.

75th Anniversary

The Seventy-Fifth Anniversary of the School of Nursing, which occurred in 1964, was celebrated by appropriate ceremonies on June 19 and 20. A program of addresses on a variety of subjects was presented to the returning alumnae, who also held their regular annual meeting. The nurses were guests of the hospital at a luncheon in the Prouty Garden on June 19, and members of the hospital and medical staffs joined the alumnae at dinner at the Harvard Club to hear Dr. Asa Knowles, the President of Northeastern University, describe the new nursing programs to be developed in that institution. There was good attendance at all events.

The school of nursing continues to offer a program in the nursing of children to students from diploma schools, of which 17 send their students. A tuition charge for this program was instituted in October 1963; the fee is $75 per student for the 12-week course.

Budgeted positions for this faculty have been increased during the past two years although it has not been possible to fill all the new places. During most of the past year there have been nine instructors; it would be desirable to increase this number to 12 and to include at least one evening and night instructor; these are difficult vacancies to fill.

The trend in nursing education in diploma schools is toward a far more carefully planned clinical experience for students, with more instructor guidance and selected assignments. In this school, with the large number of students going through the program, there has been considerable lag in accomplishing these goals. One outcome of this kind of program is a decline in the availability of the student to contribute to nursing service. While this at present appears to be remote, it is probable that the next two years will see significant changes in the student program.

There is also considerable emphasis on the desirability of having instructors, who are faculty members in the home school, teach the students in the affiliating agency. This makes for continuity in the entire program and permits the home school faculty to correlate the experiences and instruction while the students are on affiliation with the content of the course elsewhere. This kind of close relationship between the instructor in the affiliating agency and the home school faculty has proven very successful for The Children's Hospital students while at the Peter Bent Brigham. By agreement, one of the Peter Bent Brigham Hospital School of Nursing instructors will come to The Children's Hospital in 1965 to provide a comparable arrangement for Brigham students. Should it be necessary in future to provide the same facilities for other schools it is probable that many fewer students could be accommodated.

Quantity a Problem

The large number of students learning in the present clinical facilities is a cause for concern to nursing service and also to instructors in all programs. To the extent the student may be assigned to meet nursing care needs of patients, her presence creates no problem. But when her program is planned to meet her needs as a learner, many difficulties are created. Fortunately this is not entirely up to choice, and there are times when the needs of both patients and students could be served at the same time. Often, however, the student's need to learn has been sacrificed to the pressures of the hospital situation. This has been true in many places and it is true in this institution at times. Prominent among reasons for failure to correct this undesirable situation is the apparent need of many schools to use these facilities; fewer students would alleviate many pressures. A second cause is the shortage of graduate nurses in nursing service, so that students often are called upon to assume more responsibility than they are ready for. In busy emergency times only the absence of the student from the scene will guarantee no such involvement.

At the close of 1962 the faculty voted to place direction of the program for practical nursing students under the school of nursing. Formerly the instructor of these students had been a member of the nursing service.

The Boston Trade School and the Shepard-Gill School of Practical Nursing send students for eight weeks' instruction and experience in pediatric nursing; the Holy Ghost Hospital students come for four weeks.

The overall improvement in employment policies within the hospital has affected favorably faculty policies and salary scales. This has made employment here more attractive but vacancies still persist. Qualified instructors are in short supply and hospital schools are at a disadvantage in competition with college schools for a number of obvious reasons.

In the present state of nursing education with the trend toward collegiate programs, the future of any hospital-controlled school is uncertain. While national authorities and local school people alike voice conviction that the hospital school is critically needed to prepare nurses, the fact is that pressures from many quarters make continuance difficult so that most diploma schools today are questioning how far ahead they may continue in existence.

As a climate for planning and making definite recommendations, this is not very healthy. For the present, however, the need for the school is clear. Therefore, it is the obligation of all involved in its activities to bend every effort toward improving the program which the hospital will continue to offer.

Muriel B. Vesey, R.N.
Director

STUDENTS ENROLLED

	Oct. 1, '62	*Sept. 30, '64*
Children's Hospital	125	139
Affiliating	121	96
Practical Nurse	3	10

CLASS OF 1962
STATE BOARD EXAMINATIONS

	Class Average Scores	*National Mean Score*
Medical Nursing	563.1	526
Surgical Nursing	561.2	533.7
Obstetrical Nursing	573.8	529.3
Pediatric Nursing	625.4	520.3
Psychiatric Nursing	599.4	536.2

AFFILIATING SCHOOLS — SEPTEMBER 1964

Diploma Schools

Beth Israel Hospital School of Nursing
Beverly Hospital School of Nursing
Concord Hospital School of Nursing
Eastern Maine General Hospital School of Nursing
The Faulkner Hospital School of Nursing
Lasell Junior College School of Nursing
Leominster Hospital School of Nursing
Mary Hitchcock Memorial Hospital School of Nursing
McLean Hospital School of Nursing
Melrose-Wakefield Hospital School of Nursing
New England Baptist Hospital School of Nursing
New England Deaconess Hospital School of Nursing
Peter Bent Brigham Hospital School of Nursing
Quincy City Hospital School of Nursing
Truesdale Hospital School of Nursing
Worcester-Hahnemann Hospital School of Nursing

Schools of Practical Nursing

The Holy Ghost Hospital School of Practical Nursing
Shepard-Gill School of Practical Nursing
Trade High School for Girls

The Department of Patient Education and Recreation continues its work in the hospital, staffed by a Director, an Assistant, and six Recreation Coordinators, assigned one to each floor, and one to the House of the Good Samaritan. Each Coordinator directs a daily Recreation Program on her floor, with assisting personnel of student teachers, student nurses, and selected volunteers.

In January 1964, as part of the on-going program, a study of the department was conducted. It culminated in the report of a two-year study of the Recreation program for our Neurosurgical Service, and in a Manual of Operations made up of the detailed descriptions of operations for each Recreation area. At this time, we initiated an intensive evaluation program, with weekly afternoon sessions scheduled to discuss department development, evaluation, and resetting of goals.

An "Activity and Equipment Chart", a reference tool for working with patients, was developed and is now posted on the division for everyone's use. The value of this effort has been seen in easy availability of appropriate play materials to hospital personnel, increased efficiency of planning, and projected requisitioning of materials.

We worked to stabilize activities which were seen as essential to the effective running of our program. It was resolved that patient movies, a patient newspaper, cooking, hairdressing, and similar activities, are essential components of a hospital recreation program. Daily movies for patients supervised by a Recreation Coordinator, may be run by a volunteer. If, however, the volunteer is absent, the movie will be run by the Coordinator. Having established a system for these activities, we have stabilized them within our pattern of operation.

We considered music and its recognized value. We increased our record library and discussed plans for division "sings", using records as tools in the absence of a skilled song leader. We added song-sheets of words for children to use with selected records to encourage group singing. The patients and parents have enjoyed special Thursday afternoon entertainment again this year through the kindness of the Musicians Union's Benevolent Fund.

Special attention was given for one year to a weekly Nature Study Program developed with a resource teacher from the Massachusetts Audubon Society. Last year's experience pointed to a further development of a nature resource file of ideas, equipment, sources, and monthly projects, from which each Recreation Coordinator might draw according to her patients' abilities.

Volunteer Support

The staff evaluated present activities of the Recreation Volunteer, with discussion on special projects, materials for x-ray, increased musical functions, volunteer team systems for young mothers, teen-age projects, and OPD recreation.

The Volunteer Service continues to be a strong aid to department functioning. During the day Volunteer assistance in each Recreation Area under the Coordinator's supervision is a welcome resource. The Volunteer "Visit and Play" evening program, again supervised by a Recreation Coordinator, still maintains itself as a valuable contribution to the patients.

The Recreation Department also is grateful to the Women's Committee of The Children's Hospital Medical Center for its active part in the program. The two patient libraries contribute immeasurably to patient recreation with the easy availability of many beautiful books for the children. Most important, through funds contributed by the Women's Committee, we are able to maintain staff members in two patient areas that would otherwise be uncovered.

Practice teaching for college students is continuing in the Recreation Program. Participating schools are Garland Junior College, Lesley College, Sargent School of Boston University, Wheelock College, Eliot-Pearson Department of Tufts University, and Simmons College. College programs vary and students may participate from one to four days a week for a semester, supervised and instructed by the Recreation Coordinator of their assignment.

Student nurses become involved in the Patient Recreation Program by lecture and practical experience in an assigned Recreation area. Participating schools have been the Children's Hospital School of Nursing, the Simmons College School of Nursing, and the coordinated program of Radcliffe College and Massachusetts General Hospital. Additional affiliating classes are introduced to and familiarized with the program in an orientation lecture.

A basic bibliography of books, periodicals, and reprints appropriate for reference and in-

struction was compiled, with study sessions in the Wheelock College Library and the Boston Public Library enabling us to review current literature. Fifteen new books were added to our Department library.

Nursing and Recreation produced a form, "Your Child at Home", for use on the Divisions. It supplies basic information enabling the Recreation Coordinator to meet the emotional needs of each child essential to his adjustment to hospital life, and to plan appropriate activities for him.

The Recreation Staff and the Boston City School Teachers met on three occasions to discuss mutual concerns in the area of patient schooling. It was agreed that a joint meeting with teachers in similar settings would be interesting and stimulating, and might extend horizons of educational possibilities for hospitalized children. A conference on "Education and the Hospital Child" was held in December, sponsored by the Recreation Department, with a number of provocative thoughts ensuing.

Encouraged by these meetings, as well as by the expressed interest of college students hoping to spend their field periods working with our department, we initiated preliminary plans to experiment with an educational enrichment program. In January, three college students began to develop our first such project, "Children Discover Latin America". Activities were centered on Division 26 and 36, and The House of the Good Samaritan. The Pan American Society provided an effective introduction to the project with a Latin American Christmas Party. We feel that this kind of project can set a stimulating atmosphere, and become a focal point for communication that encourages patient interaction.

Another conference is in the offing. With administrative approval we formed a letter and questionaire which was sent to a selected hospital list, asking their interest in meeting on "Recreation in the Pediatric Setting." The response has been good in number and positive in feeling. We are optimistic about carrying through to explore common needs and become acquainted with our colleagues.

Mrs. Barbara Patterson
Director

PATIENT ACTIVITIES

Daily

Art work
Water play
House play
Building
Craft activities
Music
Schooling
Special Events

Special Events: magic show, traveling zoo, birthday parties, art show, holiday parties, masquerade, summer fair, education projects, carnival.

Weekly

Patient Newspaper
Hairdressing
Cooking
Electric trains
Nature study
Art class
Red Cross Arts and Skills Volunteers
ceramics and textile painting
Movies

The period from October, 1962, through September, 1964, probably has been the most significant in the history of the Hospital as far as personnel administration is concerned. With the full support of the General Director, and cooperation of the various departments, personnel policies, practices and procedures have reached a competitive position in the community. This does not mean that there is not much still to be done, but this report will show that significant progress has been made during this period.

The installation of a formal salary administration program, involving job descriptions, 14 salary grades and rate ranges has had the greatest impact on equitable pay throughout the hospital. We are now able to pay all employees a salary which is based on their actual job rather than on guesswork or whim. This program now encompasses both special fund and general fund positions, and serves as a model for other Boston hospitals who consult us frequently about salaries and fringe benefits.

An innovation in this program was introduced in February, 1964, when part-time employees lost part-time fringe benefits and acquired an hourly fringe benefit premium. It was found that many part-timers were "moonlighting" and were already receiving fringe benefits. The hourly premium now enables us to pay slightly higher wages, and encourages a better calibre of individual to apply here.

With the completion of the salary administration program, in which virtually every job in the hospital is described in detail, we were able to adopt an employee performance rating system. This provides for a systematic review of each employee at least once a year. It permits supervision to evaluate the performance of an individual with reference to his particular job description. Since the Personnel Department now has performance records on each individual, we are able to determine suitability of employees for promotion.

A perpetual Staffing Schedule was installed starting with the fiscal year 1964 to replace the personnel budget system traditionally used. Organization charts showing staff and line responsibilities in each department were developed and job codes to identify each position were assigned. This permits each department to know how many people are required in each position and what each position costs. In other words, it is now possible to know what the salary operating expense should be for each department.

Fringe Benefits

In the area of fringe benefits, much has been done to place Children's Hospital Medical Center employees on a par with other Boston Hospitals, and indeed on a comparable basis with other community institutions. We now have hospital-paid Blue Cross for each individual, and a Blue Cross-Blue Shield contract which offers the superior coverage of the "Master Medical Plan". After one year, all full-time employees are covered by a hospital-paid life insurance policy in the amount of $2,000. Our sick-payment policy is now cumulative up to a maximum of 180 days. Employees who are required to work the night shift now receive a weekly bonus to compensate for this inconvenience.

A real milestone was passed just recently when the Hospital adopted a pension plan, the entire cost of which is to be borne by the Hospital. All full-time employees who have completed two years of continuous service and have reached 30 years of age are eligible for the plan. Retirement benefits payable for life are based on annual earnings and length of service. The normal retirement age is 65 years. However, those employees who wish to remain may do so with the approval of their department head and The Employee Health Service.

In conjunction with the retirement plan outlined above, the Hospital has also taken advantage of a provision in the Internal Revenue Code which permits employees to build their own retirement fund with tax-free dollars. The Internal Revenue Service permits certain non-profit organizations to divert as much as 20 per cent of an employee's salary before federal or state taxes and set aside such funds towards an annuity. The advantages are noteworthy: no income taxes are paid on the amount diverted, taxes are levied on the reduced salary, and both the cash value growth and the accumulated dividend growth are exempt from current taxation.

Two publications were issued from the Personnel Department during this period. The first a "Personnel Manual", containing detailed information for supervision, describes all personnel policies and procedures. Over 90 copies of

this manual have been distributed to management for reference and application. The second, an "Employee Handbook", describing personnel policies, has been distributed to all employees, and is given to all new employees as they join the Hospital.

Personnel

During this two year period, the Employment Section interviewed some 6500 applicants, of which about 2100 were hired. The total payroll now stands at approximately 1750, including part-timers. I am pleased to report that even though our turnover remains high, a 10 percent reduction has been effected from 1963 to 1964. The highest percentage continues to occur in Nursing and the various service areas.

Most people familiar with hospital operating expenses are aware that approximately 70 percent of costs are in salaries and wages. Over the past two years such costs at Children's Hospital Medical Center have risen about 15 percent in the aggregate, and this figure is exclusive of the new fringe benefits which, although having a salutory effect on morale, have not come cheaply. The minimum wage has been raised twice during this period to the present rate of $1.30 per hour. Salaries for staff nurses increased 10 percent in October, 1964, and will go up another 10 percent in October, 1965. In June of 1964, salaries of house officers increased from 20 percent to just over 50 percent, depending on the year of residency. There are still a significant number of occupational groups which are below the community scale, and with wages in general continuing to spiral, I see no respite in halting or even diminishing the cost of increasing salaries.

Alexander T. Brown
Director

The Pharmacy Department has continued its rapid growth during the past two years and dispensed over $250,000 of drugs or 25 percent more drugs in 1964 than 1962, despite the fact that the cost of drugs to the hospital has decreased. This rate of growth, if continued, would result in the doubling of the Pharmacy in less than eight years. The Pharmacy further expanded its services to the hospital this year to include the distribution of intravenous solutions, intravenous sets, disposable syringes and needles.

The hours of pharmacy service were lengthened in 1964 to provide better coverage, and hopefully to decrease the work load for each pharmacist. The addition of one staff pharmacist was approved by the Administration in November, 1963, but the program could not be initiated until March, 1964, because of the shortage of available pharmacists and the salary differential. These additional pharmacy hours have made it possible for emergency clinic patients to obtain necessary medications on Sundays, Holidays and the busy early evening hours. The new hours are as follows:
Monday through Friday, 8:30 a.m. to 8:00 p.m.
Saturday, Sunday and Holidays
8:30 a.m. to 4:30 p.m.

A most important function of the Pharmacy is to supply the drugs and medications to the divisions, to all departments and the various research departments of the hospital, efficiently. Many standard medications are supplied to the divisions as floor stock to reduce delays and unnecessary trips to the Pharmacy. Special or expensive medication is prepared, labeled and charged directly to the patient. Several deliveries of medications to the divisions are made daily through the co-operation of the Special Services Department.

The dispensing of out-patient prescriptions in the Children's Hospital has become very complex as the Pharmacy not only dispenses routine clinic prescriptions but also a great many medications purchased by the Commonwealth of Massachusetts for the Crippled Children's Service, which includes patients with Cystic Fibrosis, Seizures, Nephrosis, etc. The Pharmacy dispensed over 2000 prescriptions for seizure patients and many medications for 1750 patient visits to the Cystic Fibrosis and Nephrosis Clinic in 1964. A similar program was developed with the N. E. Kidney Foundation to enable its patients to obtain necessary steroids and sulfonamides at a reasonable cost. This was done as a puplic service.

The Pharmacy dispensed over 25,000 outpatient prescriptions in 1964, not including the special classes mentioned above; an increase of over 20 percent since 1962. The dispensing of pediatric medications is time consuming and involves great responsibility due to the wide range of doses which are based on the age and weight of the patient.

Group purchasing of drugs, made possible through the Greater Boston Hospital Council, Inc., a non-profit corporation, has resulted in substantial savings without any sacrifice in quality. It has been my privilege to serve as chairman of the Committee on Drugs and Pharmaceuticals of this corporation for the past two years.

The Pharmacy became responsible for the purchase, storage, distribution and accounting for all intravenous solutions, intravenous burette sets, disposable syringes and needles in 1964. It is estimated that 50,000 to 60,000 units of intravenous fluids, purchased through the Greater Boston Hospital Council, will be used yearly. Additional space for storage was provided in the temporary Laundry Building but is inadequate and intravenous solutions are ordered on a weekly basis which does not allow for any major shipping delays.

The Pharmacy is staffed by five registered pharmacists and three assistants, which includes two undergraduate pharmacy students on the Northeastern co-op rotation plan. Mr. William Gouveia, a graduate student in hospital pharmacy, started his co-op rotation at Children's in November. This new co-op plan in pharmacy should be of great benefit to both the hospital and to Northeastern.

Arthur M. Thompson
Chief Pharmacist

The year 1964 marks the 74th anniversary of physical therapy activity within the Children's Hospital and the present Children's Hospital Medical Center. In its earlier years it had neither name nor identity, and involved one or two people of special interest working in the "Lateral Curvature Clinic" and the "Neurological Clinic". Fifty years ago (in 1914) a Physical Therapist was first appointed for work on the wards of the Children's Hospital. From this beginning the department has grown to its present complement of 20 Physical Therapists involved in patient care, teaching and research.

The accompanying statistical data shows a total of 30,839 treatments during the 1963-64 fiscal year — an increase of 12 percent over the previous year. Further comparison reflects a growing diversity which was projected in the last narrative report of 1962. In 1960, for example, 52 percent of 28,928 treatments originated in poliomyelitis patients. In 1962, this had dropped to 26 percent of 28,998, and in 1964 to 15 percent of 30,839. In-patient care has been spread over 16 different divisions and represents referral of patients from practically all services, although the orthopedic service is and will remain the major source. Significant in this diversity has been the growth of Physical Therapy in chest and respiratory disabilities which now account for roughly 14 percent of our work. Still unrealistic is the proportion of in-patients (71 percent) to out-patients (29 percent). In a hospital of this size probably the reverse should be true.

Apart from patient care, our major activity revolves around teaching on both the undergraduate and graduate level. In affiliation with Simmons College, the final 16 months of a 4½-year degree program is centered in this Department. Six Physical Therapists, ten staff Doctors and one representative from the Nursing School hold part-time faculty appointments at the College and provide the major portion of the instruction for about sixteen students each year. In post-graduate education we have been the only center in the country offering short courses on Physical Therapy in Cystic Fibrosis and other pulmonary disorders. A second one was recently announced. To date 90 physical therapists from all over the United States and Canada have attended these courses —and the demand remains high.

Cerebral Palsy Study

In research we are pleased to be participating in a study on the Evaluation of Treatment of Cerebral Palsy. Mrs. Elizabeth Zausmer and Mrs. Gail Tower are working half time on this project, developing methods of evaluating motor development.

Since September of 1962 we have had a 100 percent turn-over of personnel on the staff level but no change on the supervisory level. As of October, 1964, the average tenure of staff physical therapists was less than nine months, compared with 16 years for senior people. This is not unusual in a large teaching department nor peculiar to this institution. It does, however, require a substantial and continuing in-service education program to maintain continuity of patient care at a high standard of excellence. In extra-curricular professional activities the senior staff also continue to provide leadership. Three illustrations might be noted, namely the appointment of Mrs. Zausmer to the National Committee on Evaluation of the Foreign Trained, the election of Miss Ruth Hall as Vice-President and Miss Claire McCarthy President-Elect of the Massachusetts Chapter of the American Physical Therapy Association.

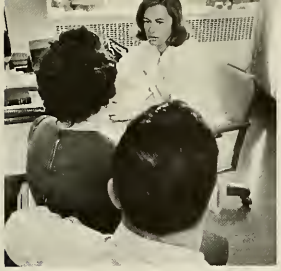
Plans for the future are directed primarily toward the expansion of out-patient service and this, in turn, is dependent on more adequate space. Although large out-patient clinics of the Medical Center are open all day, limited space permits us only a half-day clinic. The financial operation of this department is fiscally sound from the point of view of both direct and indirect expenses. Expansion could be achieved without jeopardy to this status.

In conclusion, the department wishes to express appreciation to the Administration for its direction, to the Medical Staff for its confidence, and to all other departments for their cordial and friendly cooperation without which we would be unable to function.

Shirley M. Cogland
Director

ANNUAL REPORT OF THE PHYSICAL THERAPY DEPARTMENT

	Individuals		*Treatments*	
Polio Patients in Hospital	*1964*	*1963*	*1964*	*1963*
Division 36—*Orthopedic*	50	50	1,576	1,161
Division 26—*Orthopedic*	75	84	536	710
Division 37—*Medical*	—	4	—	28
Division 34—*Surgical*	3	—	3	—
Division 39—*Neurological*	—	1	—	1
Division 35—*Cardiac*	—	1	—	13
Division 25—*Private*	2	—	2	—
Division 27—*Infants*	1	—	16	—
Division 72	1	—	26	—
Division 71	10	25	680	1,180
	142	165	2,839	3,093
Services *(excluding polio)*				
Division 36—*Orthopedic*	295	266	3,593	2,903
Division 26—*Orthopedic*	396	326	4,498	3,949
Division 37—*Medical*	109	89	1,622	1,010
Division 35—*Cardiac*	216	228	1,151	1,457
Division 71	51	49	3,053	2,161
Division 72	33	35	794	944
Division 73	—	2	—	34
Division 38—*Metabolic*	2	5	50	39
Division 14—*ENT*	10	8	85	21
Division 33—*Neurosurgical*	70	49	1,346	898
Division 27—*Infants*	65	57	915	679
Division 25—*Private*	35	30	376	171
Division 30—*Neonatal*	5	—	67	—
Division 28—*Tumor Therapy*	43	51	458	488
Division 39—*Neurosurgical*	36	26	233	93
Division 24—*Surgical*	32	22	301	192
Division 34—*Surgical*	39	28	553	232
Division 29—*Newborn Nursery*	—	6	—	117
	1,437	1,277	19,095	15,388
Hospital Personnel				
Bader Building Out-Patient				
General *Clinics*	787	828	2,199	2,171
Private	838	814	2,693	2,456
Cerebral *Palsy Clinic*	317	—	1,828	1,519
M.I.P.C.	—	—	1,589	2,012
M.I.P.C. *Outside Clinics*	—	—	41	474
	1,942	1,642	8,350	8,632
	3,561	2,954	30,839	27,382



A few years ago, a young Foreign resident, new to the United States, introduced me to a mother who had just learned her child had a serious medical disease. "This is a social worker. Don't know what she'll do, but friend in need is friend indeed."

It would be hard to conceive of a more disarming "referral" for the social worker, whose purpose is so firmly rooted in the value and power of relationship. As a young profession, social work has a good distance to go before it can boast a firm and constant footing in scientific knowledge. In the meantime, mounting evidence sustains our conviction that skillful observations of social behaviour and deepening understanding of human inter-relationships lend significant dimensions to the diagnosis and treatment of health and disease. Given the enthusiasm, curiosity, and perseverance, we may yet see the glad day when social workers and our puzzled critics no longer need to ask *exactly* what we do. The past two years in the history of our Social Service Department have been characterized by strong steps towards a disciplined examination of practice. For this report, therefore, a brief chronological account of changes and hopes will have more relevance than a reiteration of past activities, most of which we carry on, but no longer without searching concern for the future.

It is not quite two years since the appointment of a Social Service Department Director. The recipient of this position was wisely influenced by an awareness of the strength of the General Director of the hospital. Dr. Cronkhite's realistic questions and progressive support to us as a professional body have sharpened wits and given us a new identity in subtle but conspicuous ways. The first bomb of realism came when approved raises in salary ranges carried with them a reduction in staff positions by five. In retrospect, this decision had untold merit. Traditionally, in this hospital as in many others, social work departments have grown largely according to the perspective and desires of individual clinicians, and of course in direct correlation to the whereabouts and "how-much-abouts" of fiscal resources. Neither to discredit the validity of the former nor the expediency of the latter, it was certainly time, by the fall of 1963, to scrub down the paint and take an honest look at the hull.

Miss Cohen Named Consultant

In this enterprise, we enjoyed another good fortune. Miss Ethel Cohen, a distinguished leader in the field of social work, accepted the invitation of Dr. Cronkhite and the Department Director to act as consultant by exploring our total situation and pointing to ways whereby we might improve upon it. Miss Cohen's impressive background in public and voluntary health programs, in social work administration, education, and research alike, have rendered her services invaluable. In one short month, September, 1963, she wrote a penetrating report, a preliminary review of the functioning of our department within the institution as a whole, with practical suggestions for immediate improvements and recommendations for further study. Although it has not been possible to follow through on all of these, the hospital administration and social service staff have acted upon several. Miss Cohen's astute vision and talented investment of time and effort in our behalf have invigorated and solidified the performance of the department as a whole.

In May of 1964, the Community Assistance Office was created to centralize and cement relationships between patients, hospital, and outside agencies for support of in-patient care. The process of developing this unit has evolved in a dynamic way under the thoughtful direction of Mr. Richard Held, Director of Fiscal Services, in cooperation with members of his staff and of the Social Service Department. The studied and painstaking energies of these good people are "paying off" in every sense of the word, and show that concentration on the best for the patient has felicitous effects for all. We look forward to the time when this function can be expanded to include inter-agency aspects of out-patient care.

Our Camp Program continues to expand.

In 1964 we sent 143 children to 50 different camps. Families paid almost $4,000.00 while we raised over $14,000.00 from a variety of sources. Although several appeals for unified subsidy of this constructive enterprise failed, we have greatly reduced the time spent in money-raising. More importantly, the need for more imaginative and responsible recreational experiences for all children has begun to reach a wider community. Such resources as the Bay State

Society for Crippled Children, Boston Children's Services, and the Domestic Peace Corps are assuming leadership in this field. Much of the impetus for this awakening has been directly sparked by our example.

	Comprehensive Cases	
	1961-1962	*1963-1964*
Carried over from previous year	581	623
New cases for the year	1,036	816
Recurrent cases	355	307
	1,972	1,746
	Limited Services	
	1961-1962	*1963-1964*
Limited Services for the year	3,088	3,851
Total Number of Cases	5,060	5,597

Miss Cohen returned in January, 1964, this time as guiding force for a "self-study" project. Six senior staff met with her on a weekly basis for the equivalent of six months. The first phase of the study was concerned with attempts to bring into view certain activities of social workers which could suitably be performed by other than professionally trained personnel. Lack of consultation time allowed for only a start of the more complicated second stage of clarifying and redefining the potential contribution of the social worker in a pediatric hospital.

"Vital Signs"

As a close to this report, we would like to point to examples of *"vital signs"* which bode well for the future. The Director of Social Service has been drawn into the administrative fabric of the hospital. An Assistant in Staff Development is to be added to our department, whose responsibility will be to further staff education, to promote sounder integration of practice and teaching with other professions as well as with our own graduate schools, and to encourage collaborative and independent study. A full-time research social worker has been engaged, to be attached to the Clinical Research Center.

Gradually our social workers begin to be functionally related to medical research projects, a refreshing contrast to the past when our participation was characteristically restricted to non-professional tasks. In the NIMH study, the social worker, aided by two assistants, takes direct responsibility for the maintenance of follow-up of the patients studied over the years, as well as acting as a discriminating agent of referral of families to community agencies for treatment of social problems. Social workers are closely tied into such analyses of medical care as those underway in the Family Health Unit and Cystic Fibrosis Clinic. In a proposed study of cerebral palsy, pertinent measurements of social functioning of patient families have been introduced by the social worker, to be correlated with clinical findings of organic and intellectual damage.

For over two years, we have been studying families of "abused children" admitted to our hospital, together with the Boston College School of Social Work, the Division of Child Guardianship, the Society for the Prevention of Cruelty to Children, and the Social Service Exchange. By next year, we expect to publish some of the results of these explorations.

We seem to have a promising garden in the making. The test of its collective green thumb now depends largely on adequate fiscal rainfall and the climate of the institution.

(Miss) Elizabeth Maginnis
Director

The past two years reflect the changes which the field of bracing has been undergoing during the last ten or more years. This department's activities have shown some gratifying results consistent with the improvement of appliances and the techniques for measuring and fitting them. The end results of these improvements are practical and to the patient mean, better functioning, more comfortable, and more durable appliances.

The department completed 11,947 orders during the past two years, and in the same period, repair work dropped from 29.9 percent of all appliance orders received, to 17 percent. The benefits to the patients and/or parents, are three fold:

1. Monetary savings (not only the expense of the repairs, but also the savings due to a decrease in the loss of work or school, while the appliance is worked upon);

2. Aggravation and inconvenience are less frequent;

3. The department's staff has more time to make new appliances.

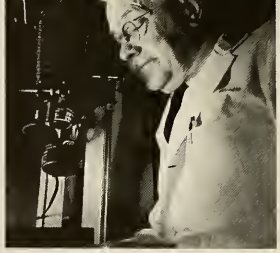
New York University, Department of Prosthetics and Orthotics Education, requested Mr. Glancy to plan and teach an undergraduate course in spinal orthotics. These undergraduates are studying for a degree in Prosthetics and Orthotics — they will be the first recipients of a B.S., in this field, in the United States. The spinal course will be given in the spring semester of 1965, at New York University.

During the past year, an extensive survey was done of the department's entire activities. Leo B. Moore, Associate Professor of Industrial Management at the Sloane Institute, Boston, did the survey and made recommendations for the improvement of the departments functions. As a result of Professor Moore's analysis, plans are being worked upon which will involve the department in an active role in research and brace development, in the future.

Braces have become more complex within recent years, and as new technical knowledge becomes available more functions and exactness, as to alignment, fit, and comfort will be demanded of them. Inevitably, many types of braces will require more time to fabricate.

However, constant improvement in design, better materials and better techniques can mean the realization of devices which are comfortable and trouble-free to the wearers who depend upon them in order to perform their daily activities. The department's staff looks forward to contributing to these goals, in the years ahead.

John Glancy
Manager



The two year period covered in this report has been very busy. A complete series of motion pictures on cerebral palsy evaluation was undertaken, showing both the neurological and orthopedic examination of the child. This has been completed on a number of children.

A new and modern motion picture camera has been received, and is making possible techniques not possible with our old equipment, in gait films and in the operating room. It is a great addition to our instrumentation.

A number of medical exhibits have been prepared and used. Hematology and Orthopedic have been notable in this area.

A new method of reproducing difficult radiographs, those too dense or too thin to be readily usable, was developed in 1964. Papers were read on this at the Annual Meeting of the Biological Photographic Association in New York and at a symposium of the Boston Chapter of the above named Association. This paper will be published at a later date.

Personnel Changes

There have been some personnel changes made. Mrs. June Armstrong retired after sixteen years of devoted service to the department. Pauline McRae stepped up as Senior Biophotographer and department supervisor and is doing a wonderfully fine job. Miss McRae has been with us nearly ten years. Maureen Doyle, secretary, requested a shift to Junior Biophotographer, which was done. After about one year of training, she left to return to Connecticut. Mrs. Nancy Ryan took over as secretary when Miss Doyle shifted to biophotography. In September, 1964, Miss Marilee McKeever was welcomed to the department as a Junior Biophotographer. Miss McKeever is a recent graduate of Massachusetts College of Art and is doing very well in biophotography. We hope she will be with us a long time.

With the motion picture equipment, tests are being conducted on "reverse zoom" techniques to further improve our orthopedic gait analysis films. Experiments are being conducted with some of the new high speed emulsions now being made, with the idea of using some of them in limited areas, where they would be most useful.

Many thanks to Miss McRae for her full cooperation in keeping the department "on the track" and seeing that work gets out as promised. Thanks to Mrs. Ryan for keeping track of a thousand details that make our work a little easier. Thanks to our new Junior Biophotographer, Miss McKeever for new ideas and the willingness to learn new techniques. Without these devoted people, the department would be difficult to operate.

F. R. Harding
Director

	Cases		*Photos*	
	1964	*1963*	*1964*	*1963*
Orthopedic	456	436	1727	1674
Surgical	265	287	682	666
Neurosurgical	137	232	312	459
Medical	810	839	1805	1845
Infants Hospital	81	90	207	216
Private Division	338	262	992	957
Private Office	233	209	630	957
Pathology	494	415	1172	934
Tumor Therapy	312	118	853	417
M I P C	55	70	247	324
Growth Study	21	46	49	86
Newborn Nursery	13	9	41	26
Adolescent Unit	—	12	—	27
Neurology	33	16	72	52
Cerebral Palsy Clinic	33	14	320	114
House of Good Samaritan	2	4	5	10
Child Health	3	3	5	5
Dental	2	—	8	—
Ear, Nose, and Throat	2	1	4	3
X-Ray Therapy	6	1	9	2
	3296	3064	9140	8374

	1964	*1963*
Miscellaneous Negatives	1863	2876
Miscellaneous Prints	5067	7388
Lantern Slides, B&W, all sizes	3647	3350
Lantern Slides, Color, all sizes	815	596
Motion Pictures	327	392
Motion Picture Footage	15,010 ft.	18,337 ft.
Total Negatives	11,101	11,337
Total Prints	14,305	15,850
Total Charges	$17,207.87	$19,328.85

Although each year the volunteer service report includes a statement of the total number of hours served as an attempt to indicate the value of the service, the quality, not the quantity, is the true measure of the program's merit. What means exist to assess such intangibles as the comfort given a frightened hurt child or the sympathetic understanding of a volunteer who offers a weary parent a cup of hot coffee and a kindly interest; or the countless young people who spend their summer vacations volunteering their bright efforts to myriad jobs throughout the hospital; or the business and professional men and women who come from their day's work to entertain a lonely child in the twilight hours?

One approach to calculating the volunteers' immense value to the hospital has been to prerate their hours of service on the basis of the minimum wage schedule, but such time and devotion could never be bought or sold—only given and gratefully accepted.

The total number of volunteers working during each month fluctuates seasonally, ranging from a low of 245 persons during September to a high of 453 in March. However, a total of 833 volunteer applicants were interviewed during 1964; 701 were placed in positions of volunteer service throughout the Hospital; our basic cadre of "old faithfuls" was approximately 160 volunteers.

New Service Areas

New areas of volunteer service developed during the period covered by this report included:

A volunteer graduate dietician was obtained, and works two days a week in the Dietary Department.

The "Transportation" service was renamed "Patient Escort" service, with the hours extended from 3:00 to 4:30, the additional time being given by Brookline High School Students.

Members of the Noemi Sisterhood distributed the Hospital's newly published "Accident Handbook" and Poison Pamphlet to all mail request for quantities up to 25 copies (24,496 copies were mailed).

On Saturday and Sunday afternoons, students from the Holy Cross Academy in Brookline provide baby-sitting and recreation for the many children who wait in the Visitors' Lobby while their parents are visiting sick children.

Once a month a young mother, whose only child passed away here last summer, creates lovely flower arrangements throughout the hospital. The carnations are donated by her brother-in-law.

Two volunteers have served as Interviewers in the Emergency Clinic and from their work the Child Health Clinic selected seven hundred families as subjects for a Medical Care Study.

The Alumnae of Radcliffe College have formed a group called "New Opportunities for Women" (N.O.W.) with the aim of placing volunteer women who are educationally equipped to perform work of a professional caliber. Members of this group were placed with Dr. Geraldine Rickard and Dr. Haskell Cohen. Dr. Rickard has trained eight women to go into the Winthrop Elementary School System and collect data for a nominative study of the normal emotional development of children. The Volunteers are also trained to score "Tasks of Emotional Development Tests," Dr. Rickard is presenting evening seminars dealing with the background analytic theory in order to define the aims of the testing program. This is an outstanding example of intelligent utilization of volunteer potentials, the professional investing time in training so that the volunteer may function at her full capacity.

The volunteers who served as hostesses in the Admitting Area were replaced by the Hospital's salaried Hostess Service, and are presently routing Patient Escort calls and serving coffee to people waiting in the Visitors' Lobby.

The In Service Nursing Education Department has given invaluable cooperation, support, and training to the Volunteer Nurses Aides. Four classes, of three weeks duration, were presented to train evening volunteers in certain elementary nursing duties, thus relieving the professional nurses of these simpler procedures for more complicated ones.

World-wide Visitors

Visitors from many nations have been inquiring about our services. From Peru came a hospital trustee; from Ceylon, a hospital administrator; from Greece, the wife of an administrator; Luxembourg, a nurse; Holland, a nurse; and from England, a nurse.

Visitors from the United States included a Director of Volunteers from California, a doctor from Peterborough, N. H.; Director of

Volunteers, Children's Hospital, Chicago; the Director of Hospitality at the United Nations; and many auxillians from other Hospitals. The Children's Hospital in Columbus, Ohio, sent its Director of Volunteers for a week's training, and the present Director of Volunteers at the Goddard Hospital, Stoughton, worked with the department until she obtained her present position.

It has been my pleasure to speak to various groups including the State College at Boston, Service League; Wheelock College, Association of Child Educators; Winchester Visiting Nurse Association; Exeter Hospital Auxiliary; Senior Class, Fisher Junior College; and several church groups. Another of my pleasant tasks is to assist Mrs. Anthony Michaels as a hostess at the Trustee Luncheons.

In September I was elected for my second term as member-at-large on the Executive Council of The Massachusetts Association, Directors of Hospital Volunteers.

Dana Arnold, who worked with me for three years, left in August to be married. Her own replacement is Mrs. Sylvia Toumey.

Sincere thanks are due Mrs. Richard Ginsberg who carefully maintains all of this department's statistical records and composes all statistical reports.

I would like to express my appreciation to Administration, Staff, Nursing Service and to the Women's Committee, for their continued support and assistance, and to the Volunteers who make this report possible and significant.

Mrs. Kathleen Higgins
Director

SERVICES

	1964 Hours	*1963* Hours
Administrative Aides	1,532¼	1,924¼
Admitting Hostesses	1,120½	1,268¼
Blood Bank	987¼	882½
Clinics	2,109¾	2,624½
Feeding	86	185¼
Gift Shop	6,218¼	6,652½
Information Desk	168½	423½
Laboratory	1,025	427
Library, Patient	1,734¼	1,465¾
Lunch Shop	7,134½	6,171
Medical Library	165	317
OPD Admitting	324¼	233
Parent Teas	212½	185¾
Patient-Escort Service	6,035¼	5,771½
Photography	172	219¾
Plaster Room	623¼	857½
Post Office	292	170¼
Print Shop	127½	682¼
Recreation	18,494¼	16,786½
Day	10,283¾	8,469½
Evening	6,979¼	6,993½
O.P.D.	530	469¾
Red Cross A&S	395¼	326¼
Div. 28	311¾	527½
Red Cross Aides	317½	567½
Surgical Dressings	428	527½
Volunteer Aides	3,140	3,108¾
Accident Handbook	43¾	495¾
Christmas Decorations	222½	189½
Dietary	239	—
Barber	12	—
Good Samaritan Clinic	—	94¼
X-Ray	—	103¾
Boy Scouts	—	100½
Operating Room	—	20
Hairdressing	—	9
Kitchen	—	60¾
TOTALS	52,965	52,525¼
VOLUNTEERS	860	984

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Printed in U.S.A.